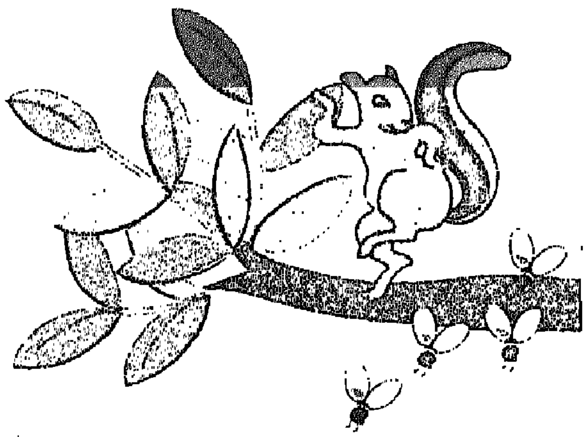


आस-पास

तीसरी कक्षा के लिए
पर्यावरण अध्ययन की पाठ्यपुस्तक

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

प्रथम संस्करण

फरवरी 2006 माघ 1927

PD 25T SC

रु 30.00

एन.सी.ई.आर.टी. वाटरमार्क 80 जी.एस.एम. पेपर पर मुद्रित।

प्रकाशन विभाग में सचिव, राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्, श्री अरविंद मार्ग, नई दिल्ली 110 016 द्वारा प्रकाशित तथा सीमा प्रिंटिंग वर्क्स, ई 5-6, मंगोलपुरी, इंडस्ट्रियल एरिया, फेज-II, नई दिल्ली 110 034 द्वारा मुद्रित।

ISBN 81-7450-473-7

एन.सी.ई.आर.टी. के प्रकाशन विभाग के कार्यालय

एन.सी.ई.आर.टी. कैंपस
श्री अरविंद मार्ग
नई दिल्ली 110 016

108, 100 फीट रोड
हेली एक्सटेंशन, होस्डेकेरे
बनाशंकरी III स्टेज
बैंगलूर 560 085

नवजीवन ट्रस्ट भवन
डाकघर नवजीवन
अहमदाबाद 380 014

सी.डब्ल्यू.सी. कैंपस
निकट: धनकल बस स्टॉप
पनिहटी
कोलकाता 700 114

सी.डब्ल्यू.सी. कॉम्प्लैक्स
मालीगांव
गुवाहाटी 781021

प्रकाशन सहयोग

अध्यक्ष, प्रकाशन विभाग	: *पी.राजाकुमार*
मुख्य उत्पादन अधिकारी	: *शिव कुमार*
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सज्जा, आवरण तथा चित्रांकन

अनीता वर्मा

आमुख

राष्ट्रीय पाठ्यचर्या की रूपरेखा (2005) सुझाती है कि बच्चों के स्कूली जीवन को बाहर के जीवन से जोड़ा जाना चाहिए। यह सिद्धांत किताबी ज्ञान की उस विरासत के विपरीत है जिसके प्रभाववश हमारी व्यवस्था आज तक स्कूल और घर के बीच अंतराल बनाए हुए है। नई राष्ट्रीय पाठ्यचर्या पर आधारित पाठ्यक्रम और पाठ्यपुस्तकें इस बुनियादी विचार पर अमल करने का प्रयास है। इस प्रयास में हर विषय को एक मज़बूत दीवार से घेर देने और जानकारी को रटा देने की प्रवृत्ति का विरोध शामिल है। आशा है कि ये कदम हमें राष्ट्रीय शिक्षा नीति (1986) में वर्णित बाल-केंद्रित व्यवस्था की दिशा में काफी दूर तक ले जाएँगे।

इस प्रयत्न की सफलता अब इस बात पर निर्भर है कि स्कूलों के प्राचार्य और अध्यापक बच्चों को कल्पनाशील गतिविधियों और सवालों की मदद से सीखने और सीखने के दौरान अपने अनुभवों पर विचार करने का कितना अवसर देते हैं। हमें यह मानना होगा कि यदि जगह, समय और आज़ादी दी जाए तो बच्चे बड़ों द्वारा सौंपी गई सूचना-सामग्री से जुड़कर और जूझकर नए ज्ञान का सृजन करते हैं। शिक्षा के विविध साधनों एवं स्रोतों की अनदेखी किए जाने का प्रमुख कारण पाठ्यपुस्तक को परीक्षा का एकमात्र आधार बनाने की प्रवृत्ति है। सर्जना और पहल को विकसित करने के लिए ज़रूरी है कि हम बच्चों को सीखने की प्रक्रिया में पूरा भागीदार मानें और बनाएँ, उन्हें ज्ञान की निर्धारित खुराक का ग्राहक मानना छोड़ दें।

ये उद्देश्य स्कूल की दैनिक ज़िंदगी और कार्यशैली में काफ़ी फेरबदल की माँग करते हैं। दैनिक समय-सारणी में लचीलापन उतना ही ज़रूरी है जितना वार्षिक कैलेण्डर के अमल में चुस्ती, जिससे शिक्षण के लिए नियत दिनों की संख्या हकीकत बन सके। शिक्षण और मूल्यांकन की विधियाँ भी इस बात को तय करेंगी कि यह पाठ्यपुस्तक स्कूल में बच्चों के जीवन को मानसिक दबाव तथा बोरियत की जगह खुशी का अनुभव बनाने में कितनी प्रभावी सिद्ध होती हैं। बोझ की समस्या से निपटने के लिए पाठ्यक्रम निर्माताओं ने विभिन्न चरणों में ज्ञान का पुनर्निर्धारण करते समय बच्चों के मनोविज्ञान व अध्यापन के लिए उपलब्ध समय का ध्यान रखने की पहले से अधिक सचेत कोशिश की है। इस कोशिश को और गहराने के यत्न में यह पाठ्यपुस्तक सोच-विचार और विस्मय, छोटे समूहों में बातचीत एवं बहस और हाथ से की जाने वाली गतिविधियों को प्राथमिकता देती है।

एन.सी.ई.आर.टी. इस पुस्तक की रचना के लिए बनाई गई पाठ्यपुस्तक निर्माण समिति के परिश्रम के लिए कृतज्ञता व्यक्त करती है। परिषद्, प्राथमिक पाठ्यपुस्तक समिति सलाहकार समूह की अध्यक्ष प्रोफ़ेसर अनीता रामपाल एवं पर्यावरण अध्ययन पाठ्यपुस्तक समिति की मुख्य सलाहकार डा. सावित्री सिंह की विशेष आभारी है। इस पाठ्यपुस्तक के विकास में कई शिक्षकों

ने योगदान दिया, इस योगदान को संभव बनाने के लिए हम उनके प्राचार्यों के आभारी हैं। हम उन सभी संस्थाओं और संगठनों के प्रति कृतज्ञ हैं जिन्होंने अपने संसाधनों, सामग्री तथा सहयोगियों की मदद लेने में हमें उदारतापूर्वक सहयोग दिया। हम माध्यमिक एवं उच्च शिक्षा विभाग, मानव संसाधन विकास मंत्रालय द्वारा प्रोफ़ेसर मृणाल मीरी एवं प्रोफ़ेसर जी.पी. देशपांडे की अध्यक्षता में गठित निगरानी समिति (मॉनिटरिंग कमेटी) के सदस्यों के प्रति अमूल्य सुझाव देने के लिए आभार व्यक्त करते हैं। व्यवस्थागत सुधारों और अपने प्रकाशनों में निरंतर निखार लाने के प्रति समर्पित एन.सी.ई.आर.टी. टिप्पणियों एवं सुझावों का स्वागत करेगी जिनसे भावी संशोधनों में मदद ली जा सके।

निदेशक
राष्ट्रीय शैक्षिक अनुसंधान और
प्रशिक्षण परिषद्

नई दिल्ली
20 दिसंबर 2005

पाठ्यपुस्तक निर्माण समिति

अध्यक्ष, प्राइमरी पाठ्यपुस्तक सलाहकार समिति

अनीता रामपाल, *प्रोफ़ेसर,* शिक्षा विभाग (सी.आई.ई.), दिल्ली विश्वविद्यालय, दिल्ली।

मुख्य सलाहकार

सावित्री सिंह, *प्राचार्या,* आचार्य नरेंद्र देव कॉलेज, नई दिल्ली एवं *पूर्व-फेलो,* विज्ञान शिक्षा एवं संचार केंद्र, दिल्ली विश्वविद्यालय, दिल्ली।

सदस्य

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जूही श्रीवास्तव, *कार्यक्रम समन्वयक,* निरंतर, नई दिल्ली।

कविता शर्मा, *व्याखाता,* प्रारंभिक शिक्षा विभाग, एन.सी.ई.आर.टी.।

ममता पंडया, *कार्यक्रम समन्वयक,* पर्यावरण शिक्षा केंद्र, अहमदाबाद।

पूनम मोंगिया, *सहायक अध्यापिका,* सर्वोदय कन्या विद्यालय, विकास पुरी, नई दिल्ली।

प्रीति चड्ढा, *प्राइमरी अध्यापिका,* प्रायोगिक बेसिक स्कूल, सी.आई.ई, दिल्ली।

रविन्दर पाल, *उच्च व्याख्याता,* डी.आई.ई.टी, राजेंद्र नगर, नई दिल्ली।

रीतू सिंह, *व्याख्याता,* डी.ई.एस.एस.एच, एन.सी.ई.आर.टी.।

सिमंतिनी धुरू, *निदेशक,* अवेही अबेकस प्रोजेक्ट, मुंबई।

स्मृति शर्मा, *व्याख्याता,* लेडी श्रीराम कॉलेज, नई दिल्ली।

सोनिया शामीहोक, *अध्यापिका,* संस्कृति स्कूल, चाणक्यपुरी, नई दिल्ली।

सुस्मिता मलिक, *भूतपूर्व सलाहकार,* पी.एस.ई.बी, चंडीगढ़।

सदस्य एवं समन्वयक

मंजु जैन, *प्रोफ़ेसर,* प्रारंभिक शिक्षा विभाग।

भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक **संपूर्ण प्रभुत्व-संपन्न, समाजवादी, पंथ-निरपेक्ष, लोकतंत्रात्मक गणराज्य** बनाने के लिए तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक **न्याय**,

विचार, अभिव्यक्ति, विश्वास, धर्म
और उपासना की **स्वतंत्रता**,

प्रतिष्ठा और अवसर की **समता**
प्राप्त कराने के लिए,

तथा उन **सब में** व्यक्ति की गरिमा और
राष्ट्र की एकता और अखंडता
सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर **अपनी इस संविधान सभा में** आज तारीख 26 नवंबर, 1949 ई. (मिति मार्गशीर्ष शुक्ला सप्तमी, संवत् दो हज़ार छह विक्रमी) को **एतद्द्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।**

आभार

इस पुस्तक के निर्माण में सहयोग के लिए राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद् विभिन्न संस्थाओं, विषय-विशेषज्ञों, शिक्षकों एवं विभागीय सदस्यों के प्रति कृतज्ञता ज्ञापित करती है।

पुस्तक के विकास में सहयोग के लिए हम प्रोफ़ेसर कृष्ण कांत वशिष्ठ, *विभागाध्यक्ष*, प्रारंभिक शिक्षा विभाग, एन.सी.ई.आर.टी. के प्रति हम विशेष रूप से आभार व्यक्त करते हैं जिन्होनें हर संभव सहयोग दिया।

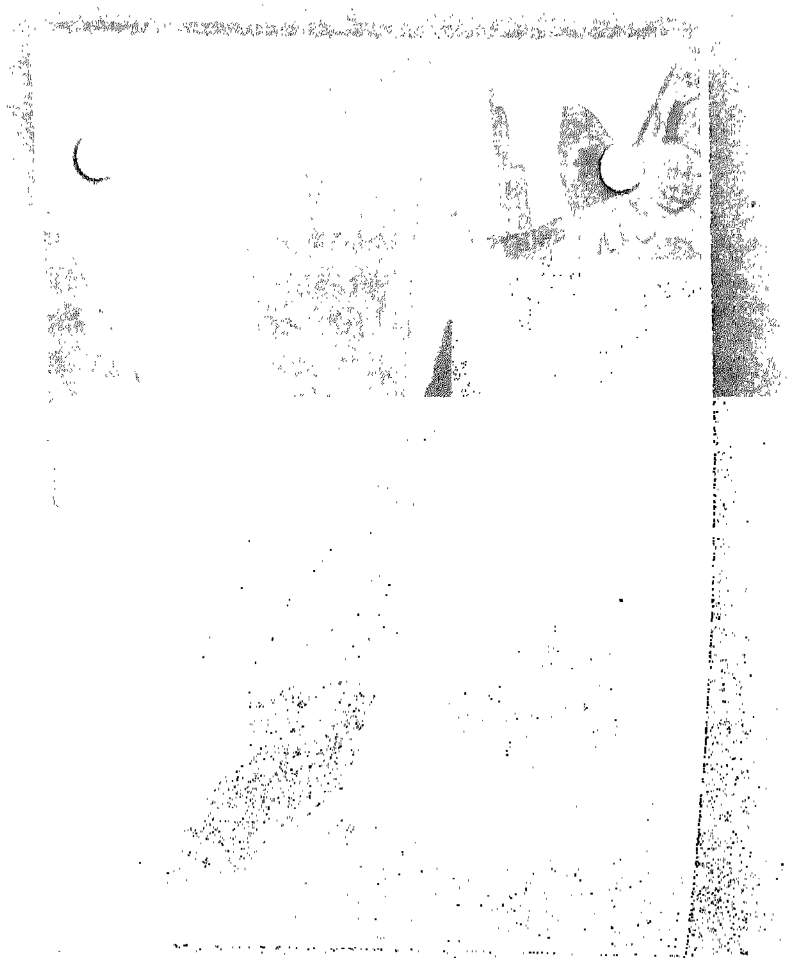
परिषद् पुस्तक के विकास में सहयोग के लिए उन समस्त रचनाकारों तथा संस्थाओं के प्रति आभार व्यक्त करती है, जिन्होंने इस पुस्तक में रचनाओं के प्रकाशनार्थ अनुमति प्रदान की। इसके लिए विजेंद्र पाल सिसौदिया (*पत्ते*); श्रीप्रसाद (*पानी*); सचिव, भारत ज्ञान विज्ञान समिति (*घर प्यारा*); जीन वाईटहाउस पीटरसन द्वारा रचित, अरविंद गुप्ता द्वारा अनुवादित तथा भारत ज्ञान विज्ञान समिति द्वारा प्रकाशित (*मेरी बहन सुन नहीं सकती*); हरीश निगम (*बादल आए*), एकलव्य द्वारा प्रकाशित; हरेंद्रनाथ चट्टोपाध्याय (*रेलगाड़ी*) तथा अन्नपूर्णा सिन्हा (*फुदगुदी और भनाते*)।

पर्यावरण शिक्षण केंद्र, अहमदाबाद; अवेही अबेकस, मुंबई; एकलव्य, भोपाल; होमी भाभा विज्ञान शिक्षण केंद्र (हल्का फुल्का विज्ञान), मुंबई; दिगंतर, जयपुर; निरंतर, नई दिल्ली; नेशनल बुक ट्रस्ट, नई दिल्ली; राज्य शैक्षिक अनुसंधान एवं प्रशिक्षण परिषद् (एस.सी.ई.आर.टी.) दिल्ली; विज्ञान शिक्षा एवं संचार केंद्र, दिल्ली विश्वविद्यालय, दिल्ली आदि संस्थाओं का आभार व्यक्त करती है, जिनकी प्रकाशित पाठ्यसामग्री से परिषद् लाभांवित हुई तथा उनके सदस्यों का सहयोग प्राप्त हुआ।

पुस्तक विकास में सहयोग के लिए हम अंजनी कौल, *व्याख्याता*, विज्ञान एवं गणित शिक्षा विभाग, तथा एम.के. सतपथी, *प्रोफ़ेसर*, उत्तर-पूर्वी क्षेत्रीय शिक्षा संस्थान, मेघालय, शिलांग, एन.सी.ई.आर.टी., के प्रति आभारी हैं।

ऊषा चौजर, *प्राइमरी टीचर*, एयर फोर्स बाल भारती स्कूल, नई दिल्ली; दीपाहरी, *लेखक एवं संपादक*, अवेही अबेकस प्रोजेक्ट, मुंबई; अनीता जुल्का, *प्रवाचक*, विशेष आवश्यकता समूह शिक्षा विभाग, सुषमा जयरथ, *प्रवाचक*, महिला अध्ययन विभाग, आर.बी.एल. सोनी, *प्रवाचक*, प्रारंभिक शिक्षा विभाग आदि विभागीय सदस्यों द्वारा पुस्तक को उपयोगी बनाने हेतु महत्त्वपूर्ण सुझावों के लिए परिषद् आभार व्यक्त करती है।

पुस्तक के विकास के विभिन्न चरणों में सहयोग के लिए कविता चौधरी, *डी.टी.पी. आपरेटर;* दुर्गा देवी, *प्रूफ रीडर;* कल्पना वाजपेयी, *कॉपी एडीटर;* सुशीला शर्मा एवं निर्मल मेहता, *सहायक कार्यक्रम समन्वयक*, शाकंबर दत्त, *प्रभारी कम्पयूटर कक्ष*, प्रारंभिक शिक्षा विभाग के हम आभारी है। प्रकाशन विभाग द्वारा हमें पूर्ण सहयोग एवं सुविधाएं प्राप्त हुई, इसके लिए हम आभारी हैं।



एस. अमाल जेरी अर्थपुथराज, 10 वर्ष,
सेंट पैट्रिक मॉडर्न उच्च माध्यमिक विद्यालय, पांडिचेरी

दो शब्द शिक्षकों एवं अभिभावकों से

राष्ट्रीय पाठ्यचर्चा की रूपरेखा (एन.सी.एफ) 2005 में कथित उद्देश्यों को एक राष्ट्र स्तर की पर्यावरण अध्ययन की पाठ्यपुस्तक में प्रस्तुत करना लेखन मंडल के लिए एक चुनौतीपूर्ण कार्य था। लेखन मंडल पाठ्यपुस्तक के विकास से जुड़े अपने अनुभव तथा मुद्दों को सबके साथ बाँटना चाहेगा।

इस आयु वर्ग के बच्चे अपने परिवेश को समग्र रूप में देखते हैं भागों में नहीं, तथा इससे जुड़े किसी भी विषय को 'विज्ञान' तथा 'सामाजिक अध्ययन' के रूप में नहीं देखते। अत: यह आवश्यक समझा गया कि इस पुस्तक में बच्चों के परिवेश के प्राकृतिक और सामाजिक घटकों को समग्र रूप में प्रस्तुत किया जाए। पर्यावरण अध्ययन विषय का पाठ्यक्रम भी अलग-अलग विषयों से उप-विषयों की सूची लेने की बजाए ऐसे उप-विषय (थीम) प्रस्तावित कर रहा है जो की बच्चों के जीवन के बहुत करीब से जुड़े हों। पाठ्यपुस्तक में प्रयास है कि प्रत्येक उप-विषय से जुड़े प्राकृतिक, सामाजिक और सांस्कृतिक पक्ष बहुत सूक्ष्म रूप से उभरे ताकि बच्चे अपने विचार सोच-समझ कर बनाएँ।

राष्ट्रीय स्तर पर कक्षा के बहुसांस्कृतिक स्वरूप को प्रतिबिंबित करना एक चुनौतीपूर्ण कार्य रहा। यह आवश्यक समझा गया कि सभी बच्चों को महत्व मिले – उनका समाज, संस्कृति, रहन-सहन आदि सभी महत्त्वपूर्ण हैं। पाठ्यपुस्तक लिखते समय मुख्य प्रश्न था कि 'किस बच्चे को संबोधित कर रहे हैं?' - क्या वे किसी बड़े शहर के किसी बड़े विद्यालय के बच्चे हैं, या किसी झुग्गी-झोपड़ी के किसी विद्यालय के, या किसी एक ग्रामीण स्कूल के या फिर दूर-दराज के किसी पहाड़ी इलाके के? इतनी विविधताओं को पाठ्यपुस्तक में कैसे समाहित किया जाए? लिंग, वर्ग, संस्कृति, धर्म, भाषा, भौगोलिक स्थिति आदि सभी को समाहित करना था। कैसे बच्चों को व्यक्तियों में होने वाली भिन्नताओं के प्रति संवेदनशील बनाया जाए? – ये कुछ मुख्य मुद्दे थे जो पाठ्यपुस्तक में समाहित किए हैं तथा जिन्हें अध्यापकों को भी अपने तरीके से संभालना है।

पुस्तक में विषय-वस्तु बाल-केंद्रित रखी गई है जिससे बच्चों को स्वयं खोजकर पता करने का अवसर मिले। पाठ्यपुस्तक में यह प्रयास किया है कि रटने की प्रवृति कम हो अत: परिभाषाएँ, वर्णन, अमूर्त प्रत्यय आदि को स्थान नहीं दिया है। पाठ्यपुस्तक में जानकारी देना बहुत ही सरल कार्य है। वास्तविक चुनौती है कि बच्चों को मौका दिया जाए जिससे वे अपने विचार प्रकट करें, उत्सुकता को बढ़ा सकें, करके सीखें, प्रश्न करें तथा प्रयोग कर सकें। बच्चे

पाठ्यपुस्तक से खुशी-खुशी जुड़ें, इसके लिए पाठों का प्रस्तुतीकरण विविध तरीकों से किया गया है – किस्से-कहानियाँ, संवाद, कविताएँ, पहेलियाँ, हास्य खंड, नाटक, कक्षा-कक्ष के बाहर, क्रियाकलाप द्वारा आदि। बच्चों में कुछ बातों के प्रति संवेदनशीलता विकसित करने के लिए अक्सर किस्से-कहानियों का इस्तेमाल महत्त्वपूर्ण माना गया है क्योंकि बच्चा कहानी के पात्र से अपने को आसानी से जोड़ सकता है। पुस्तक में प्रयुक्त भाषा भी 'औपचारिक' नहीं है बल्कि बच्चों की बोल-चाल की भाषा है।

ज्ञान सृजन के लिए बच्चों का क्रियाशील होना ज़रूरी है। इस विषय की पढ़ाई को कक्षा की चारदीवारी के बाहर से जोड़ा गया है। पाठ्यपुस्तक में क्रियाकलापों द्वारा बच्चों में अवलोकन क्षमता के लिए बाग-बगीचे, तालाब के किनारे, प्रकृति भ्रमण पर ले जाने की ज़रूरत है। इससे उनमें अवलोकन के साथ-साथ अन्य कौशलों का विकास भी होगा। पाठ्यपुस्तक में प्रयास किया गया है बच्चों के स्थानीय ज्ञान को विद्यालय के ज्ञान से जोड़ना। यह ध्यान देने की बात है कि पाठ्यपुस्तक में सम्मिलित क्रियाकलाप मात्र सुझावात्मक है। क्रियाओं व प्रश्नों को पाठों के अंत में न देकर उन्हें पाठ का ही हिस्सा बनाया गया है। अतः अध्यापकों को पुस्तक में दिए क्रियाकलापों और इस्तेमाल की गई सामग्री को स्थानीय परिवेश के अनुसार रूपांतरित करना है। पुस्तक में विविध प्रकार के क्रियाकलाप हैं जो बच्चों को, अवलोकन, खोज, वर्गीकरण, प्रयोग, चित्र बनाना, बात-चीत करना, अंतर ढूँढ़ना, लिखना आदि सभी कौशलों को सीखने का मौका देंगे। पाठ्यपुस्तक में बहुत सारे ऐसे क्रियाकलाप हैं जिन्हें बच्चे स्वयं अपने हाथों से करेंगे और उससे उनमें गामक कौशलों का विकास होगा। बच्चों में सृजनात्मकता को उभारना, रचना करने का कौशल एवं सौन्दर्यबोध का विकास भी होगा। क्रियाकलापों के बाद उस विषय पर चर्चा बच्चों को अपने अवलोकन के निष्कर्ष निकालने में सहायक होगी। साथ ही सही दिशा में चर्चा या सुझाव, बच्चे में व्यक्तिगत रूप से सीखने में ज़्यादा मददगार हो सकते हैं।

पुस्तक में इस बात की काफी गुँजाइश है कि बच्चे ज्ञान के लिए शिक्षक और पाठ्यपुस्तक के अलावा अन्य स्रोतों की मदद लें जैसे – परिवार के सदस्य, समुदाय के लोग, समाचार-पत्र एवं पुस्तकें, इत्यादि। इससे यह स्पष्ट हो सकेगा कि पाठ्यपुस्तक ही मात्र सीखने का स्रोत नहीं है। बहुत समय पहले की जानकारी या इतिहास की झलक के लिए बच्चों को अपने बड़ों की मदद लेने के लिए प्रोत्साहित किया गया है। इससे बच्चों के अभिभावकों और समाज का विद्यालय से जुड़ाव तो होगा ही, साथ ही योगदान भी बढ़ेगा। शिक्षक को भी बच्चों के परिवारों के बारे में जानने का मौका मिलेगा।

चित्र, इस आयु वर्ग के बच्चों की पुस्तकों का महत्त्वपूर्ण अंग होते हैं। लेखन दल ने ध्यान रखा है कि चित्र की प्रकृति लिखित बातों को प्रतिबिंबित करे। पुस्तक में विषय-वस्तु को चित्रों

की सहायता से बढ़ाना एक प्रमुख आधार रखा गया है। चित्रों का इस्तेमाल इस तरह भी किया गया है कि वे लिखित कार्य के पूरक हों। चित्र बच्चे को खुशी तो प्रदान करें ही, साथ ही वे उनसे कुछ सीखें भी। पाठ्यपुस्तक में विभिन्न प्रकार के क्रियाकलापों में विभेद करने के लिए कुछ चिह्नों का प्रयोग किया गया है जिसकी सूची पुस्तक में सम्मिलित की गई है।

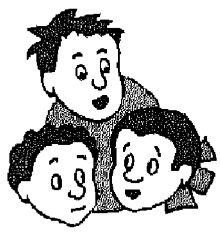
पाठ्यपुस्तक में बच्चों को काम करने के विविध प्रकार के अवसर दिए गए हैं, जैसे अकेले, छोटे समूह या बड़े समूह में काम करना। समूह में किए पारस्परिक क्रियाकलापों से बच्चे एक-दूसरे से बहुत कुछ सीखते हैं और इससे मिलकर कार्य करने की क्षमता बढ़ती है। बच्चे शिल्पकला और चित्रकला को समूह में करके आनंदित होते हैं। जब बच्चों की रचनात्मकता की प्रशंसा की जाती है तो वे बहुत खुश होते हैं व उसके प्रति उत्साहित भी होते हैं अत: उनकी प्रशंसा की जाए, उनकी रचनात्मकता को अनावश्यक रूप से नकारा न जाए।

पाठ में प्रश्नों तथा क्रियाकलापों का उद्देश्य मात्र सूचना अथवा जानकारी को जाँचना नहीं है बल्कि बच्चों को अपने विचार प्रकट करने का अवसर देना है। इन प्रश्नों तथा क्रियाकलापों को करने के लिए उन्हें पूरा समय दिया जाना चाहिए क्योंकि हर बच्चा अपनी गति से सीखता है। अध्यापक, बच्चों की आवश्यकता, पढ़ाने का तरीका तथा स्थानीय स्थिति के अनुरूप अपने मूल्यांकन में तरीके स्वंयं निर्धारित करेगा। बच्चों के कौशलों का मूल्यांकन, उनके द्वारा की गई क्रियाओं - कक्षा में अथवा कक्षा के बाहर - के अनुरूप होना चाहिए। मूल्यांकन एक सतत् प्रक्रिया है अत: विभिन्न परिस्थितियों जैसे अवलोकन करना, प्रश्न पूछना, ड्राइंग अथवा चित्रकारी करना, समूह में चर्चा करना आदि, के दौरान मूल्यांकन होना जरूरी है।

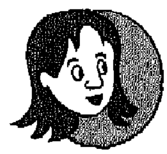
पाठ्यपुस्तक के विकास में लेखन मंडल के सामने एक प्रमुख मुद्दा था कि समाज में पाई जाने वाली भिन्नताओं के प्रति बच्चों की संवेदनशीलता बढ़ाई जा सके। चाहे वे भिन्नताएँ शारीरिक क्षमताओं, आर्थिक स्थिति तथा हमारे व्यवहार में अंतर के कारण हो – यह सब चीजें हमारे रहन-सहन, पहनने के तरीके तथा भौतिक सुविधाओं की उपलब्धता आदि में परिलक्षित होती हों। हमें हर बच्चें को यह पहचान करवानी होगी कि किसी भी समाज में भिन्नता स्वभाविक है। हमें इन भिन्नताओं की प्रशंसा तथा सम्मान करना सीखना है। अध्यापकों को इस बात पर विशेष ध्यान देना होगा जिससे सामाजिक मुद्दों को संवेदनशीलता के साथ संभाला जा सके खासकर जब कक्षा-कक्ष में विशेष आवश्यकता समूह वाले बच्चे हों या फिर परेशान माहौल से आने वाले बच्चे।

लेखन मंडल ने न केवल बच्चे के बारे में सोचा है अपितु अध्यापक को भी ऐसे व्यक्ति के रूप में देखा है जो ज्ञान सृजन करते हैं और अपने अनुभवों को बढ़ाते हैं। अत: इस पाठ्यपुस्तक को सीखने-सिखाने की सामग्री की तरह देखा गया है जिसके इर्द-गिर्द शिक्षक अपनी पढ़ने-पढ़ाने की क्रिया को संगठित करे ताकि बच्चों को सीखने के अवसर मिल सकें।

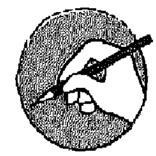
पाठ्यपुस्तक में इस्तेमाल किए गए चिह्न



चर्चा करो



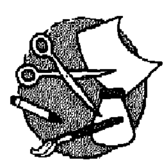
बताओ



लिखो



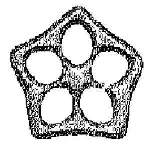
सोचो



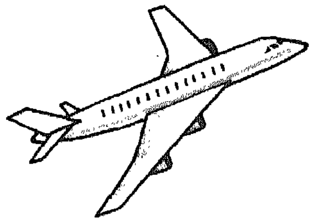
करो / बनाओ

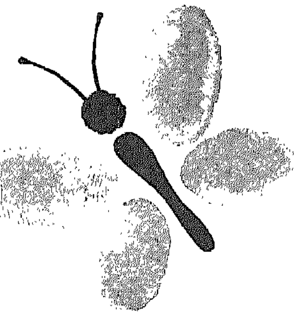


पता करो



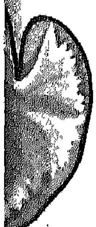
अध्यापकों / अभिभावकों के लिए संकेत

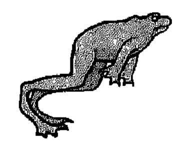




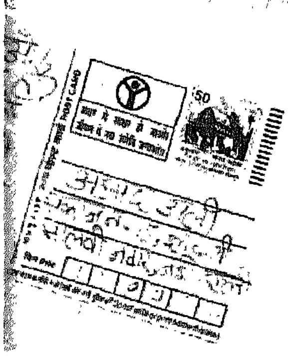


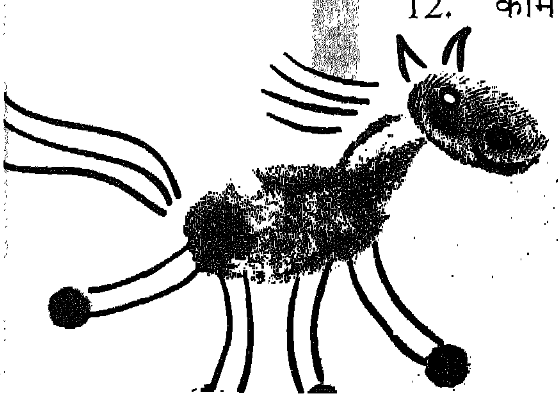


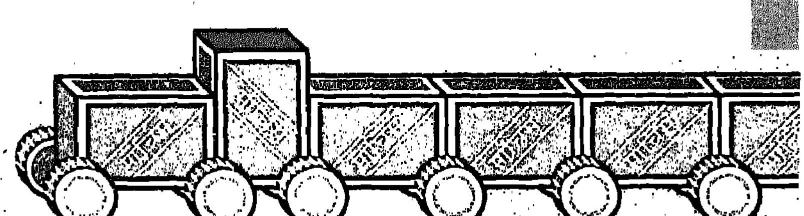




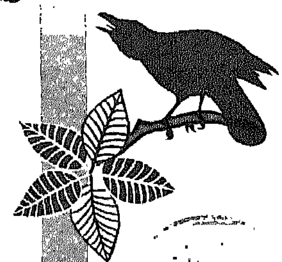


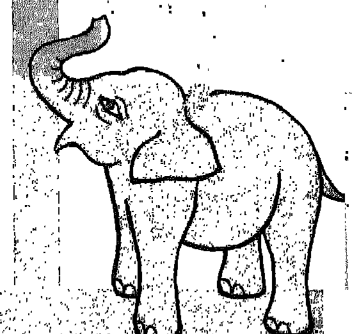




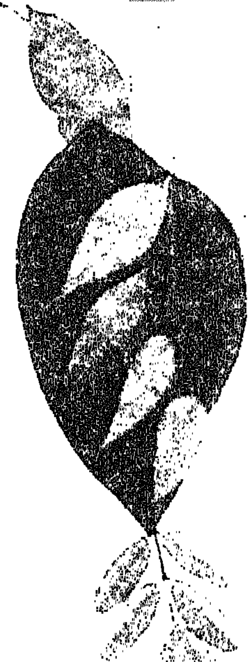










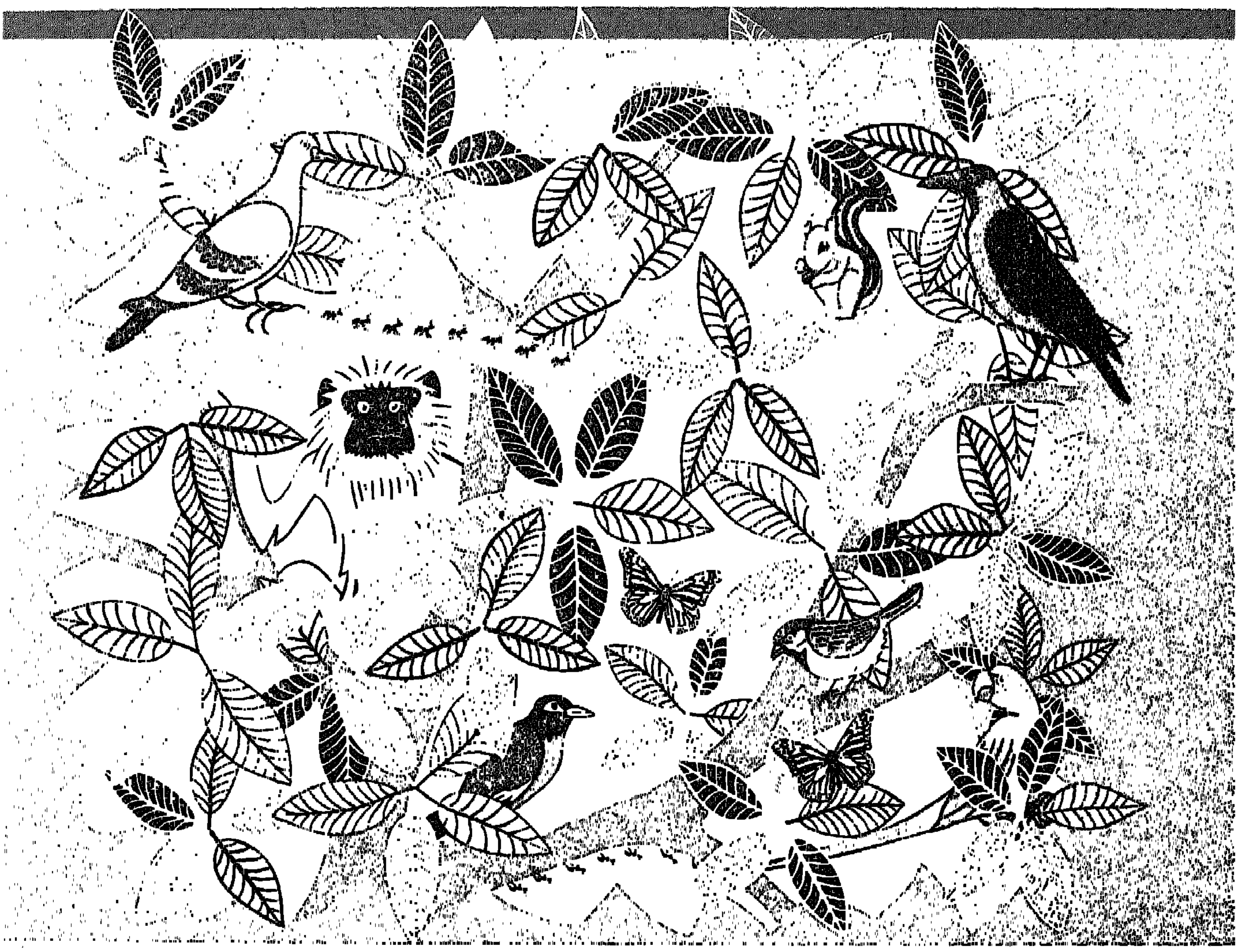




[illegible] 1

माँ, आज मुझे स्कूल भेज दो न! दो दिन से घर में बैठे-बैठे बोर हो गई हूँ – पूनम बोली। माँ ने जवाब दिया – तुम्हें अभी भी बुखार है। बाहर, जाकर चारपाई पर लेट जाओ।

चारपाई पर लेटे-लेटे पूनम को नींद आ गई। अचानक उसके चेहरे पर कुछ गिरा। वह हड़बड़ाकर उठी। उसने अपने गाल पर हाथ लगाया। उफ! यह किसकी शरारत है – कबूतर की या कौए की? हूँ, कौए की ही लगती है!



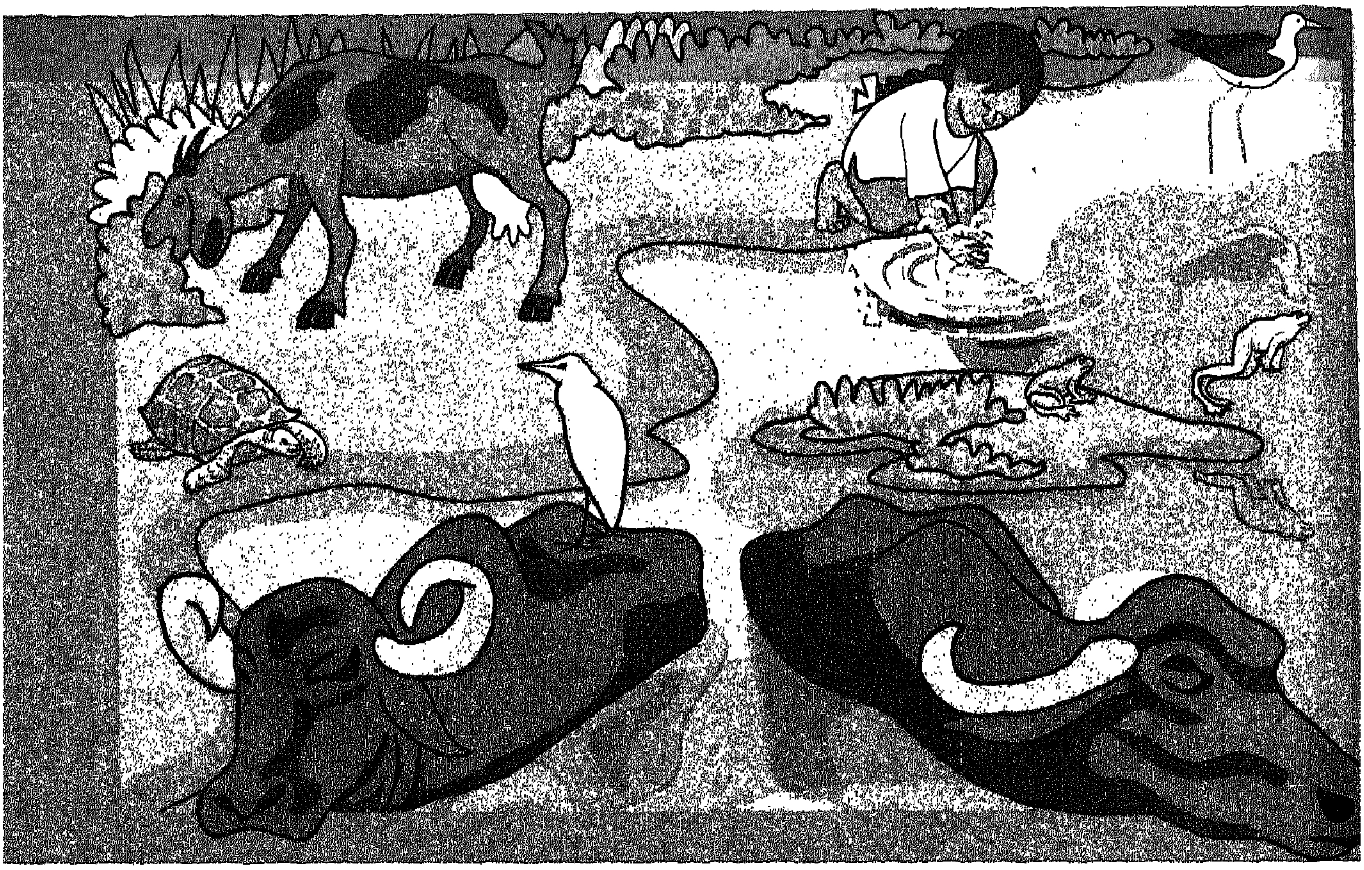
बच्चे अपने आस-पास के लोगों और चीज़ों को देखकर, समझकर बहुत कुछ सीखते हैं। इस अध्याय से भी कक्षा के बाहर की दुनिया का अवलोकन करवाया जाए – कक्षा में बैठकर केवल पढ़ा न जाए।

पूनम ने पेड़ पर कई जानवर देखे। तुम्हें चित्र में पेड़ पर कौन-कौन से जानवर दिखाई दे रहे हैं? उनके नाम लिखो।

________ ________ ________ ________

________ ________ ________ ________

ज़मीन से पूनम ने एक पत्ता उठाया और बीट को पोंछा। गाल अभी भी चिपचिपा था। उसने सोचा, सामने तालाब में धो आती हूँ।



पूनम ने तालाब पर किन-किन जानवरों को देखा? चित्र देखकर उनके नाम लिखो।

________ ________ ________

________ ________ ________

किताब में 'जानवर' शब्द का इस्तेमाल सभी तरह के जानवरों – कीड़े, पक्षी, स्तनधारी आदि के लिए किया गया है। इस उम्र में बच्चे कीड़े-मकौड़े या साँप और छिपकली का अधिक बारीकी से वर्गीकरण नहीं कर सकते। आप भी पता करें कि बच्चे जानवर शब्द से क्या समझते हैं।

तालाब पर दिखे जानवरों का अभिनय (एक्शन) करके दिखाओ। कौन-सा जानवर क्या हरकत करता होगा? जानवरों की अलग-अलग आवाज़ें भी निकालो।

जानवरों के चलने का ढंग अलग-अलग होता है। कुछ चलते हैं तो कुछ रेंगते हैं। कुछ उड़ते हैं तो कुछ तैरते हैं। इसके लिए कुछ पैरों की मदद लेते हैं तो कुछ पंखों की। कुछ तो पूँछ का सहारा भी लेते हैं।

तुमने भी बहुत सारे जानवर देखे होंगे। उनमें से कौन-कौन से जानवर –

उड़ते हैं ______ ______ ______

रेंगते हैं ______ ______ ______

चलते हैं ______ ______ ______

फुदकते हैं ______ ______ ______

पंख वाले हैं ______ ______ ______

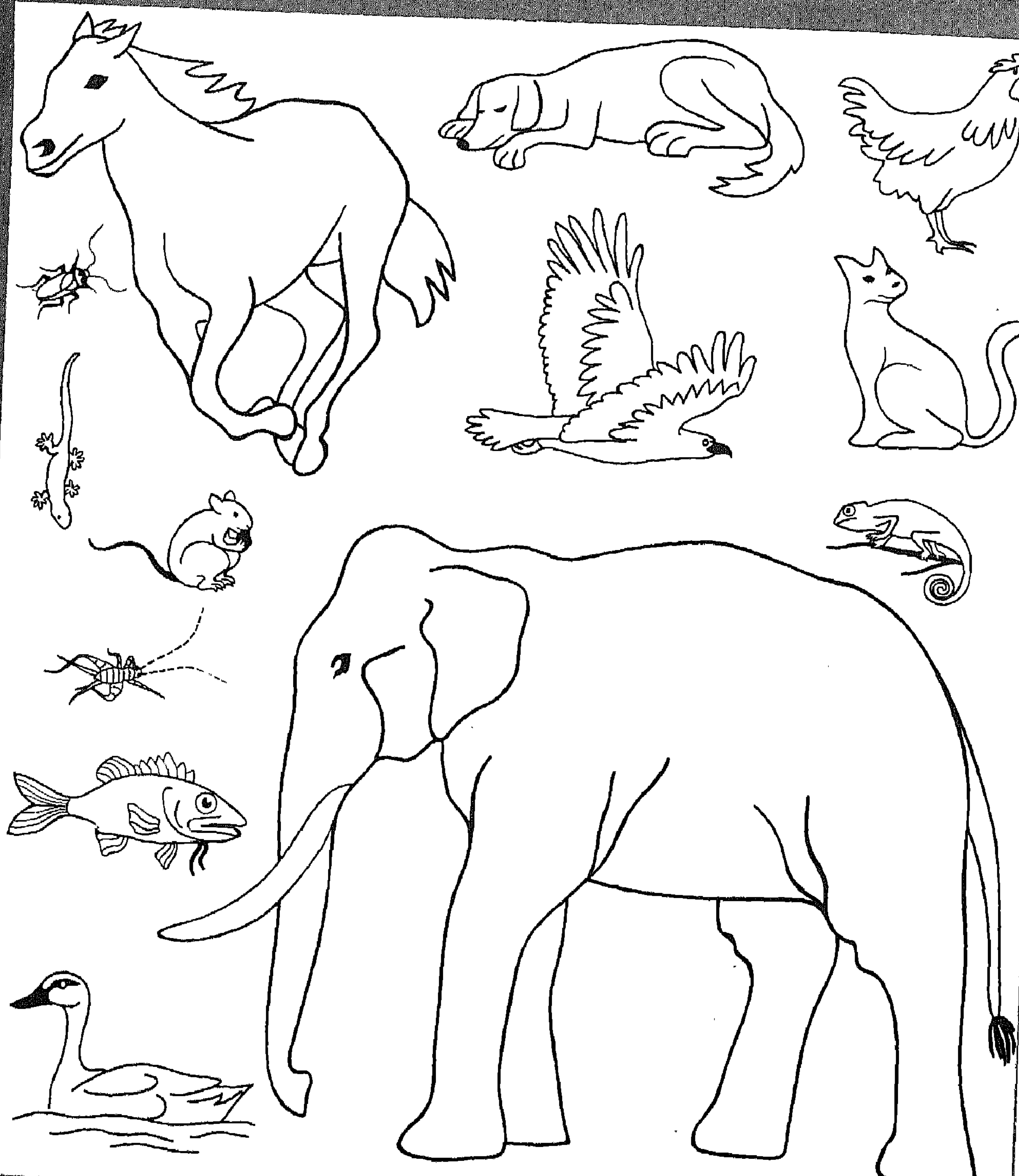
पैर वाले हैं ______ ______ ______

पूँछ वाले हैं ______ ______ ______

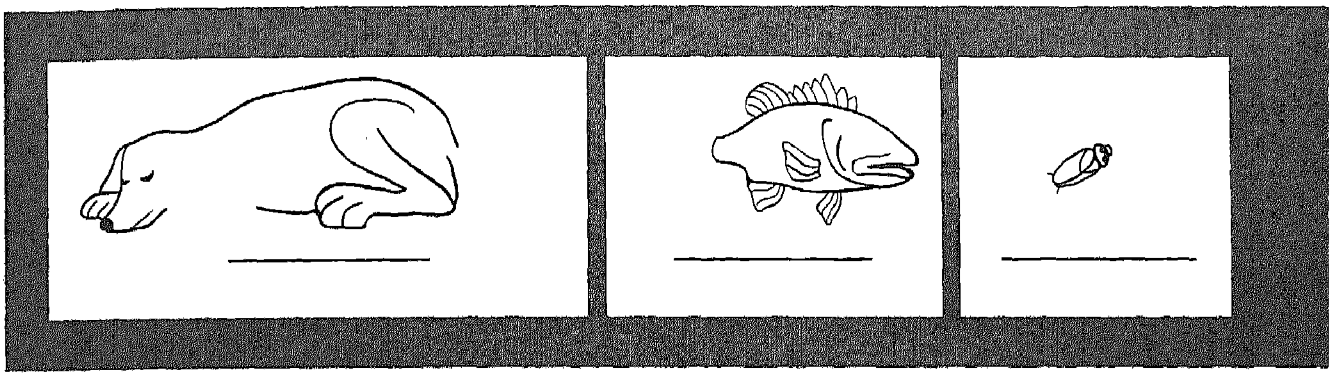
जानवर अलग-अलग जगह रहते हैं। कुछ पेड़ पर रहते हैं तो कुछ पानी में। कुछ ज़मीन पर रहते हैं तो कुछ उसके नीचे। कुछ तो हमारे घरों में भी रहते हैं।

जानवरों के रंग, रूप, चाल, आवाज़ आदि देखना, उनकी नकल करना बच्चों को बहुत रोचक लगता है। जानवरों की विविधता देखकर उनके अलग-अलग समूह बनाने से ही वर्गीकरण की शुरुआत होती है।

नीचे दिए चित्रों को देखो। इनमें से जो जानवर तुम्हारे घर में नहीं रहते, उनमें रंग भरो।



❖ यहाँ कुछ जानवरों के अधूरे चित्र हैं। इन्हें पूरा करो इनके नाम नीचे लिखो।



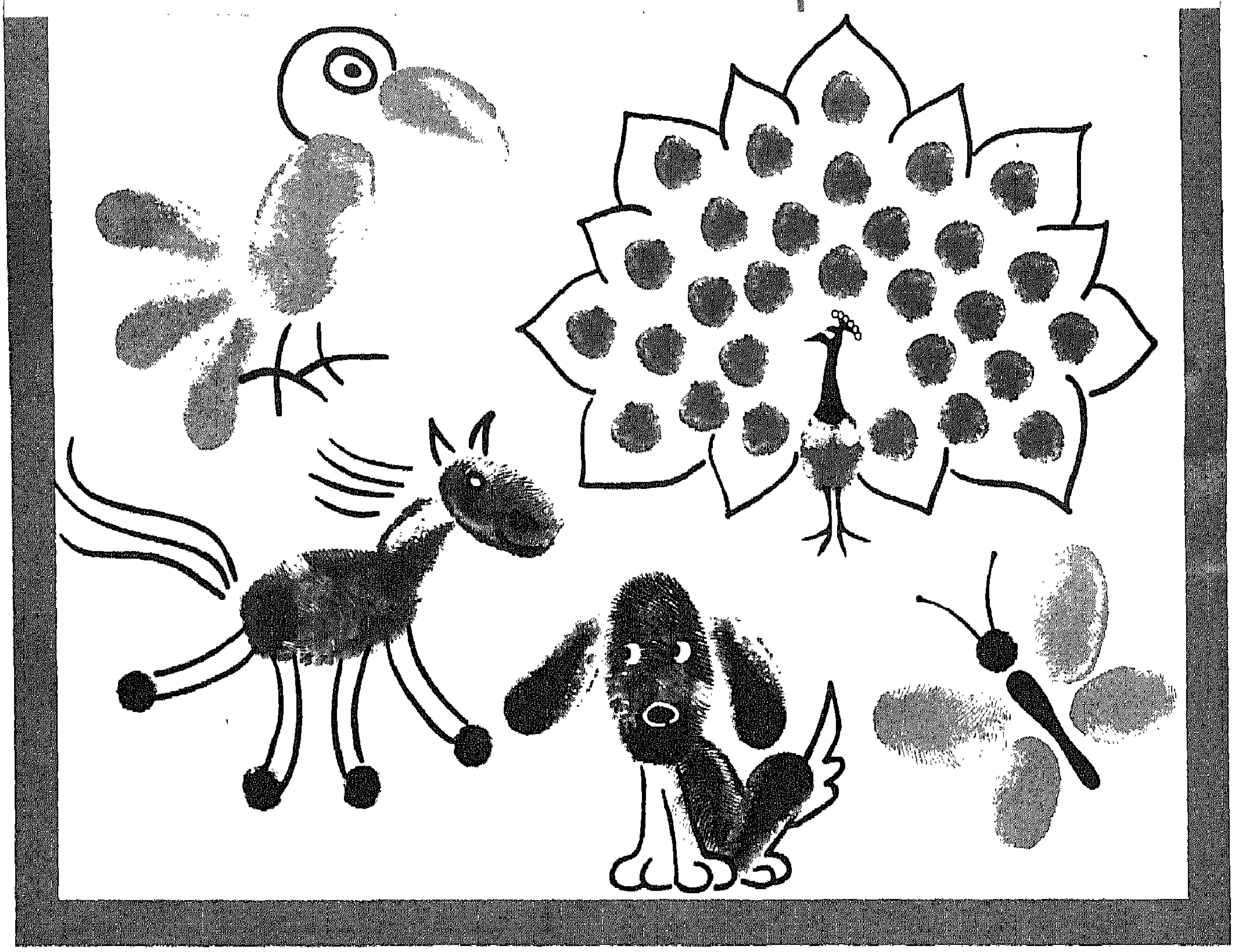
मैं कौन हूँ?

वर्ग पहेली में मेरा नाम ढूँढ़ो और उन पर घेरा ◯ लगाओ। एक उदाहरण दिया है।

1. छत पर बैठकर केला खाऊँ,
   इधर-उधर मैं कूद लगाऊँ।
2. दीवारों पर जाल बनाऊँ,
   जिसमें कीड़ों को फंसाऊँ।
3. जाग-जाग कर रात बिताऊँ,
   दिन निकले तो मैं सो जाऊँ।
4. टर्र-टर्र-टर्र की रट लगाऊँ,
   फुदक-फुदक पानी में जाऊँ।
5. बारिश के बाद नज़र मैं आऊँ,
   पाँव नहीं पर रेंगता जाऊँ।
6. धीमी चाल से चलता जाऊँ,
   दौड़ में फिर भी जीत मैं पाऊँ।

द	क	छु	आ	ग
र	बं	में	ढ	क
च	द	स	म	प
क	र	ह	उ	न
म	क	ड़ी	ल्लू	च
कें	चु	आ	म	छ

पहेली 6 का आधार पंचतंत्र की कहानी 'खरगोश और कछुआ' है। कहानी सुनाकर बच्चों को पंचतंत्र की और कहानियाँ पढ़ने के लिए भी प्रेरित करें।



चित्र में देखो और बताओ कौन-से निशान उंगलियों के हैं, और कौन-से अंगूठे के।

तुम भी इसी तरह स्याही या गीले रंग से कागज़ पर जानवरों के चित्र बनाओ। दिए गए चित्रों की नकल मत करना, अपने मन से बनाना। इन चित्रों से अपने स्कूल और घर को सजाओ।

बच्चों को सृजनात्मक गतिविधियों जैसे उंगलियों और अंगूठे पर रंग लगाकर चित्र बनाना अच्छा लगता है। उन्हें अपनी इच्छा से अलग-अलग तरह के डिज़ाइन बनाने के लिए प्रोत्साहित करें।

आओ कुछ चित्र बनाएँ

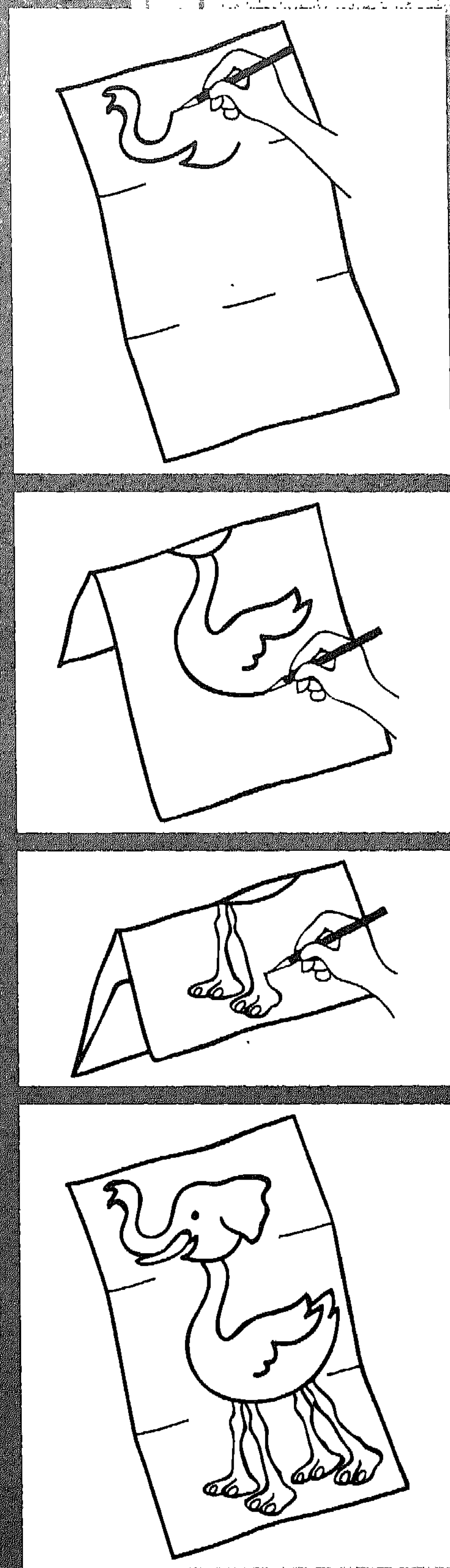
- किसी ऐसे जानवर का चित्र कॉपी में बनाओ, जिसे तुमने देखा है।
- अब अपनी पसंद के किसी एक जानवर का मुँह बनाओ और किसी एक जानवर के पैर बनाओ।

अब तीन बच्चे मिलकर एक चित्र बनाएँगे। एक कागज़ को तीन हिस्सों में मोड़ लो।

1. एक बच्ची कागज़ के पहले हिस्से में किसी जानवर का मुँह बनाए। कागज़ को मोड़ कर अपने चित्र को छुपा ले।
2. दूसरी बच्ची बीच वाले हिस्से में किसी और जानवर का धड़ बनाए।
3. तीसरी बच्ची किसी और जानवर के पैर बनाए।
4. अब इस पूरे कागज़ को खोलो और चित्र देखो।

बन गया न मज़ेदार जानवर!

अपने साथियों के चित्रों को भी देखो।



बच्चों को प्रोत्साहित करें कि वे जानवरों को ध्यान से देखें और अपने मन से चित्र बनाएँ। 'समूह में चित्र' बनाने में बच्चों को सहायता की आवश्यकता हो सकती है।

किसी पेड़ के नीचे कुछ देर बैठो। ध्यान से देखो, पेड़ पर और उसके आस-पास कौन-कौन से जानवर हैं –

डालियों पर ______ ______ ______

पत्तों पर ______ ______ ______

तने पर ______ ______ ______

ज़मीन पर ______ ______ ______

पेड़ के आस-पास ______ ______ ______

अब इन जानवरों को एक क्रम में लिखो – छोटे से बड़े तक।

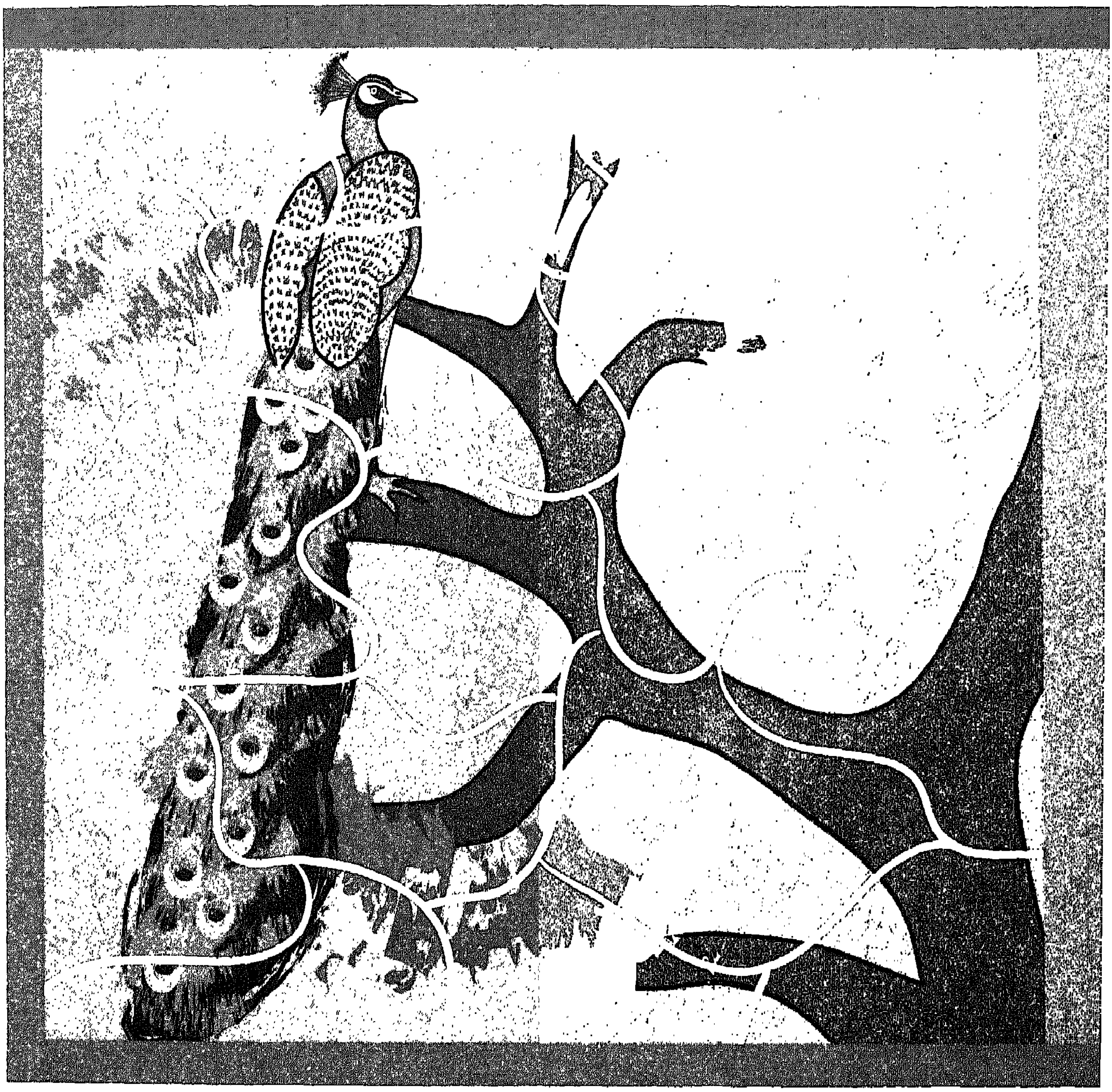
1. ______	2. ______	3. ______
4. ______	5. ______	6. ______
7. ______	8. ______	9. ______
10. ______	11. ______	12. ______
13. ______	14. ______	15. ______

जिग्सॉ का खेल

जिग्सॉ में किसी चित्र के ऐसे टुकड़े होते हैं कि उनको मिलाने के लिए बहुत दिमाग लगाना पड़ता है।

यह गतिविधि चीज़ों को क्रमानुसार लगाने का शुरुआती कदम है। क्रम में लगाना बच्चों के अपने अनुभव पर निर्भर करता है – चूहा चिड़िया से छोटा भी हो सकता है और बड़ा भी।

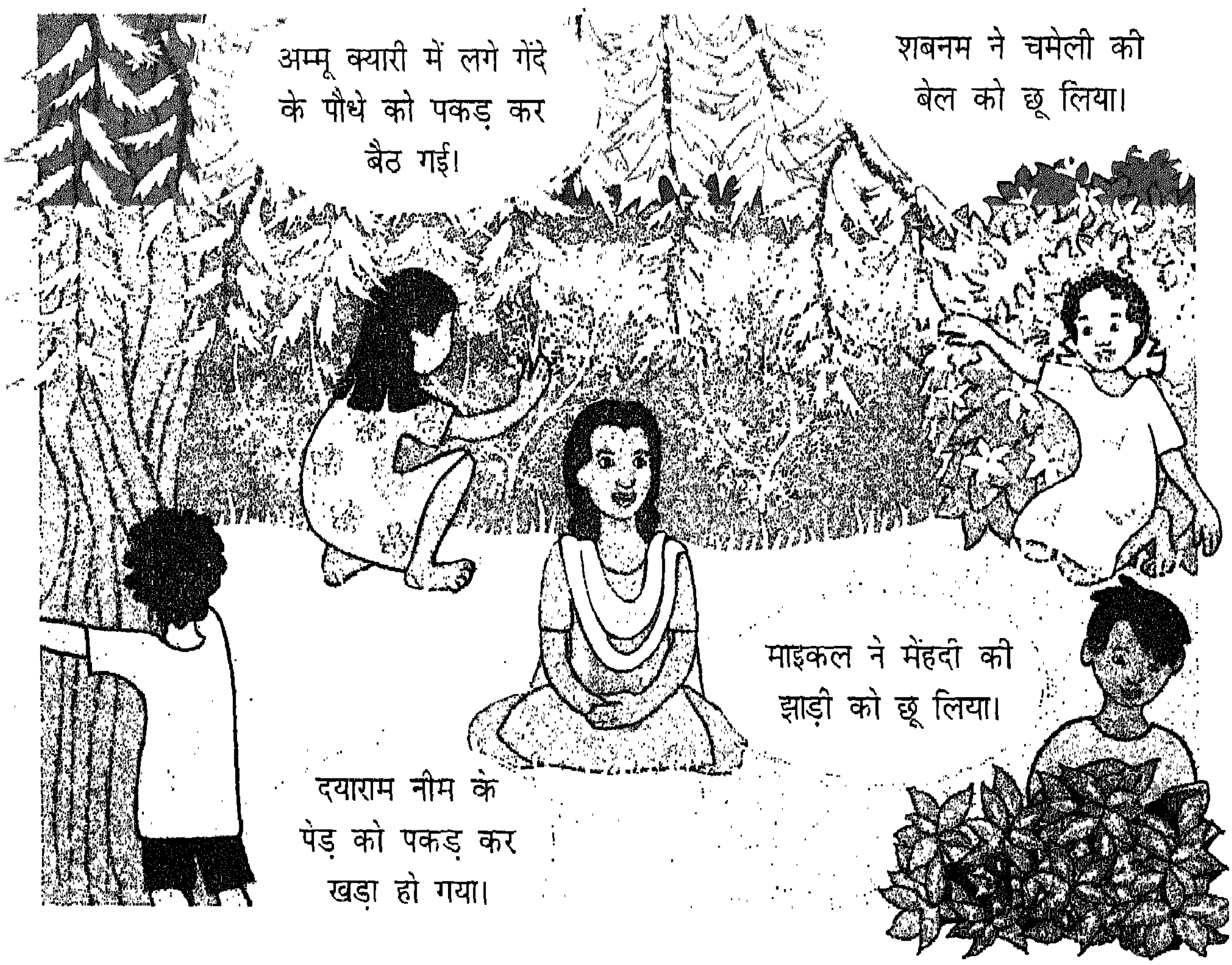
अब तुम भी किसी जानवर के चित्र से एक जिग्सॉ बनाओ। चित्र को गत्ते पर चिपकाओ। गत्ते को जानवर के आकार में काटो। अब इस गत्ते को आड़े-तिरछे टुकड़ों में काटो। टुकड़े अलग-अलग करके अपने दोस्तों से जोड़कर देखने को कहो। उनसे जानवर का नाम भी पूछो।



जिग्सॉ ऐसा बनाया जाए कि उसमें कुछ चुनौती हो – सीधे-सीधे टुकड़े न हों जो आसानी से ही जोड़े जा सकें।

रविवार को हम सब बच्चे पास के बगीचे में गए। वहाँ सबने **छुपनछुपाई** और **अंताक्षरी** खेली। बहुत मज़ा आया। फिर दीदी ने कहा – आओ, मैं तुम्हें एक नया खेल सिखाती हूँ। हमने पिछले कैंप में इसे खेला था। मैं बन जाती हूँ 'पौधों की परी'। 'पौधों की परी' जिस चीज़ का नाम लेगी, तुम्हें उसे छूना होगा।

दीदी ने खेल शुरू किया। वह बोली – 'पौधों की परी' कहती है, किसी पौधे को छू लो। इतना सुनते ही सब बच्चे पौधों को छूने भागे।



बच्चों से इस बारे में बातचीत की जा सकती है कि उनके यहाँ छुपनछुपाई, अंताक्षरी आदि खेलों को किस नाम से पुकारा जाता है।

दीदी बोली – अरे वाह! सबने एक-एक पौधे को छू लिया। ज़रा देखो तो, सबके पौधे कितने अलग-अलग हैं।

शबनम बोली – दीदी, आप भी तो छोटे-छोटे पौधों पर बैठी हो।



सोचो तो दीदी किन पौधों पर बैठी होंगी?

खेल फिर शुरू हुआ। अब 'पौधों की परी' ने कहा – एक ऐसे पेड़ को छुओ जिसका तना या तो बहुत मोटा हो या फिर पतला हो।





बच्चे फिर भागे मोटे और पतले तने वाले पेड़ों को छूने।

क्या तुमने कोई ऐसा पेड़ देखा है जिसका तना चित्र में दिखाए पेड़ जितना मोटा हो?

माइकल को खेल बड़ा रोचक लगने लगा था। खेल में परी बनकर वह सब बच्चों पर अपना हुक्म जो चला सकता था। वह बोला – अब मैं बनूँगा 'पौधों की परी'। पर मैं 'परी'! चलो, बन जाता हूँ। सब हँसे और करने लगे 'परी' के आदेश का इंतज़ार।

माइकल बोला – सब बच्चे जल्दी से मुझे कुछ पत्ते लाकर दो।

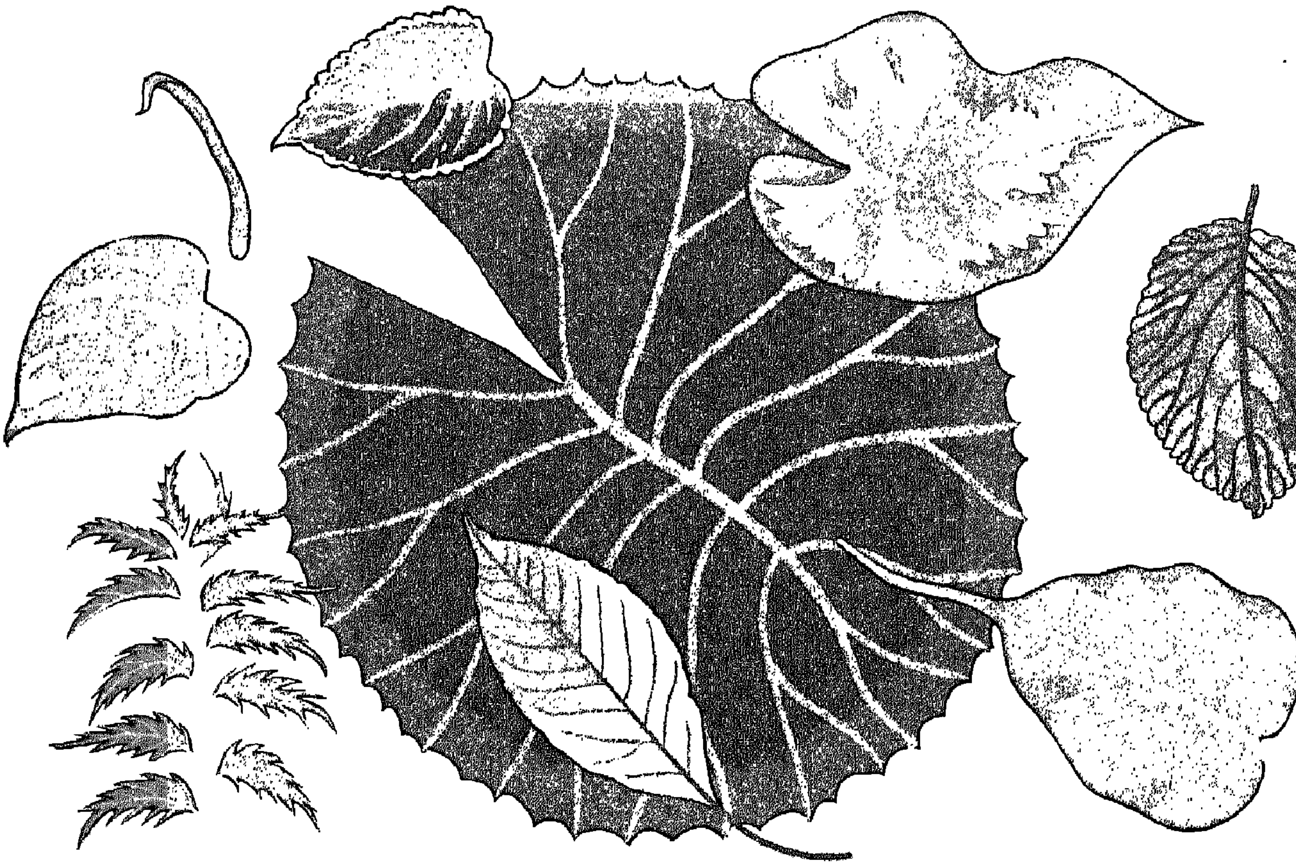
दीदी ने कहा – लेकिन ध्यान रहे तोड़कर नहीं।

सब दौड़ पड़े और जो पत्ते नीचे पड़े मिले उन्हें उठा लाए।

यह खेल बच्चे खुद खेलकर पेड़-पौधों में पाई जाने वाली विविधता को देखकर महसूस कर पाएँगे। अलग-अलग बच्चे यदि 'पौधों की परी' बनेंगें तो अच्छा होगा क्योंकि वे खुद वर्गीकरण का आधार चुनेंगें।



क्या सभी पत्तों का रंग, आकार और किनारे एक जैसे हैं?



दयाराम ने कहा – मुझे तो पता ही नहीं था कि पत्ते इतनी तरह के होते हैं। देखो, कोई गोल है, कोई लंबा और कोई तिकोना!

अम्मू बोली – इन सबके रंग भी कितने अलग-अलग हैं – कोई हल्का हरा तो कोई गाढ़ा हरा। कोई तो पीला, लाल, बैंगनी है। एक पत्ता है तो हरा, पर उसमें सफ़ेद धब्बे हैं।

शबनम बोली – देखो, पत्तों के किनारे भी तो कितने अलग-अलग हैं। किसी पत्ती का किनारा सीधा है, तो किसी का कटा-फटा। कुछ के किनारे तो आरी की तरह हैं।

अब मैं बनूँगी 'पौधों की परी' – अम्मू और शबनम इकट्ठे बोले।

दीदी ने कहा – अगले इतवार को बनना। अब घर जाने का समय हो गया है।

रास्ते में दीदी ने सब बच्चों को एक कविता सुनाई –

पत्ते

हरे-हरे और गीले, ढीले,
लाल, बैंगनी और कुछ पीले।
तरह-तरह के होते पत्ते,
बड़ी तरह के होते पत्ते।
कुछ हाथी के कान के जैसे,
फड़फड़ाएँ शैतान के जैसे।
कटे-फटे कुछ मुड़े-तुड़े से,
खाएँ कुछ को पान के जैसे।
सुबह सवेरे, बड़े अँधेरे,
ओस के आँसू रोते पत्ते।
लगे कोई तितली कोई भौंरा,
रूएँदार कोई बिल्कुल कोरा।
बनता कोई सूख के काँटा,
कोई पिचककर बने कटोरा।
साँय-साँय, सन्-सन्, फड़-फड़,
हवा चले तो करते बड़-बड़।
दिन भर रहते खिले खिले से,
सूरज के संग सोते पत्ते।
तरह-तरह के होते पत्ते,
बड़ी तरह के होते पत्ते।

– विजेंद्र पाल सिसोदिया

बच्चों को कविता गाना अच्छा लगता है। उन्हें ज़बरदस्ती याद करने को नहीं कहा जाए। अच्छा होगा कि सभी बच्चे कक्षा में साथ-साथ गाएँ।

कविता के चारों तरफ़ बने पत्तों में रंग भरो।

कुछ पत्ते इकट्ठे करो जैसे — नींबू, आम, नीम, तुलसी, पुदीना, हरा धनिया। इन पत्तों को मसलो और उनकी महक सूँघो। क्या सभी पत्तों की महक एक-सी है? क्या तुम सिर्फ महक से इन पत्तों को पहचान पाओगे?

देखो, कितने सुंदर चित्र बने हैं। हाँ, यह सूखे पत्तों से ही बने हैं।

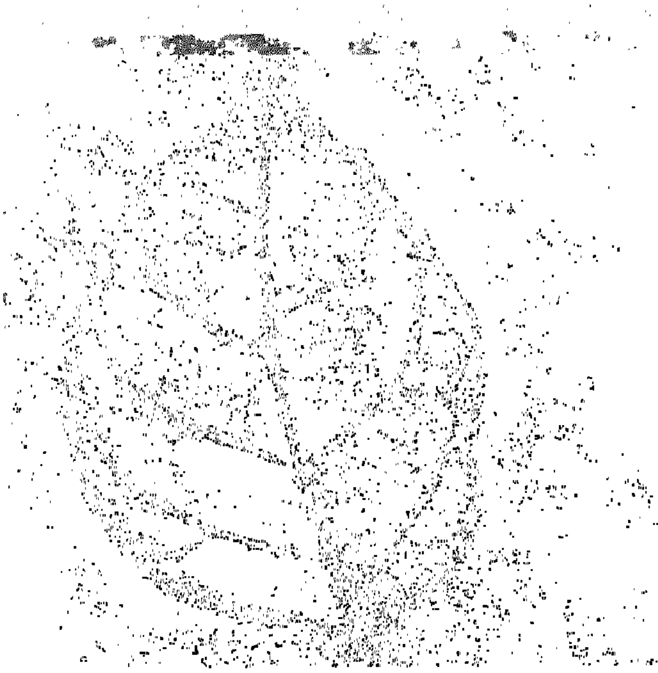


तुम भी अब सूखे पत्तों से अलग-अलग जानवरों के चित्र अपनी कॉपी में बनाओ।

मशहूर कलाकार विष्णु चिंचालकर (इंदौर, मध्य प्रदेश) ऐसे सूखे पत्तों से बढ़िया चित्र बनाते थे। यह कलाकारी भी उन्हीं से प्रेरित है।

❋ दीदी ने सबको पत्तों और तनों की **छाप** लेना भी सिखाया। देखो कैसे।

एक कागज़ और मोमी रंग या पेंसिल लो। पत्ते को मेज़ या ज़मीन पर रखो।



ध्यान रहे जिस तरफ़ पत्ते की नसें उभरी हुई हैं, उसे ऊपर की तरफ़ रखना है।

कागज़ को पत्ते पर रखो।

अब हल्के हाथ से कागज़ पर मोमी रंग या पेंसिल फेरो। पत्ते और कागज़ को हिलाना नहीं।

❋ अब इसी तरह किसी तने की छाप भी लो।



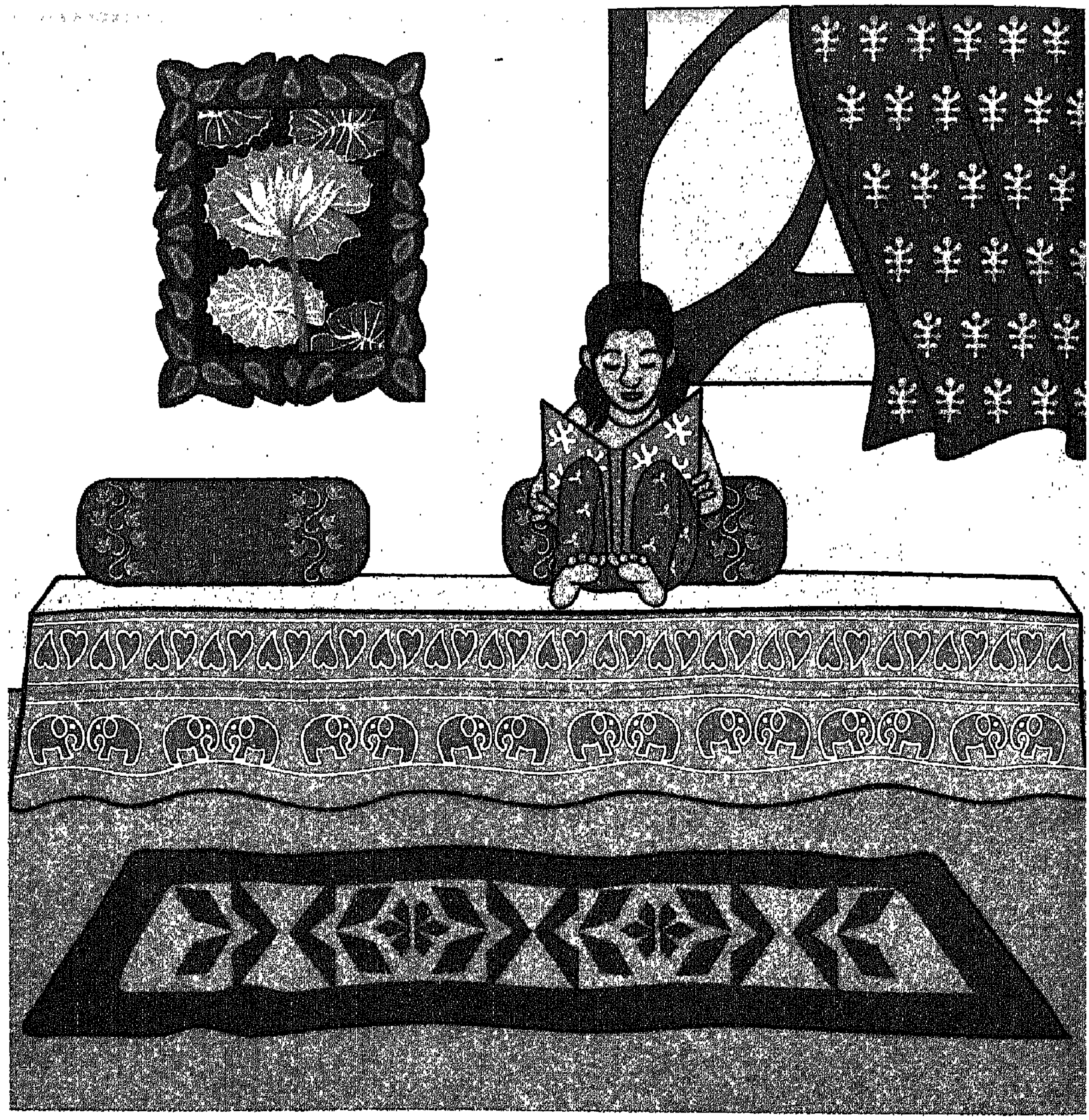
इसके लिए एक कागज़ को पकड़कर तने पर रखो और उस पर रंग फेरो। देखो, तुम्हारे कागज़ पर तने की छाप बन गई!

अब एक-दूसरे की बनाई छाप को देखो। क्या सब पेड़ों की छाप एक जैसी है?

कौन-से पत्ते की छाप अच्छी बनी?

किस पेड़ की छाप लेना मुश्किल था? क्यों?

चित्र में कौन-कौन सी चीज़ों पर फूल-पत्तियों का डिज़ाइन बना हुआ है?



पेड़-पौधों के बारे में जानकारी लेने के लिए बच्चे अपने बड़ों से पूछें अथवा किसी किसान या माली से भी पता करें।

- अपने घर में देखो किन-किन चीज़ों पर फूल-पत्तियों के डिज़ाइन बने हैं?

  ______ ______ ______ ______

- तुमने बहुत सारे पेड़-पौधे देखे हैं। उनमें से तुम कितनों के नाम जानते हो? उनके नाम लिखो।

  ______ ______ ______ ______

  ______ ______ ______ ______

- ऐसे पेड़-पौधों के नाम लिखो जिनको तुमने कभी नहीं देखा, लेकिन उनके नाम सुने हैं।

  ______ ______ ______ ______

  ______ ______ ______ ______

- किसी बुजुर्ग से पता करो। क्या कोई ऐसे पेड़-पौधे हैं, जो उस समय होते थे जब वे छोटे थे, लेकिन अब वे दिखाई नहीं देते?
- क्या कोई ऐसे पेड़-पौधे हैं, जो पहले नहीं थे, पर अब दिखते हैं?

पेड़ से दोस्ती

तुम्हारे स्कूल या घर के आस-पास कोई एक पेड़ ढूँढ़ो और उससे दोस्ती करो। एक लंबी दोस्ती!

- यह किस चीज़ का पेड़ है? यदि नहीं जानते तो बड़ों से पूछो।
- क्या तुम दोस्त पेड़ को कुछ खास नाम देना चाहोगे? क्या रखोगे उसका नाम?

बच्चों को किसी एक पेड़ से रिश्ता बनाने के लिए प्रेरित करें – उसे पानी देना, उसकी देखभाल करना, उसको बारीकी से देखना आदि। इससे पर्यावरण के प्रति उनका लगाव भी बढ़ेगा।

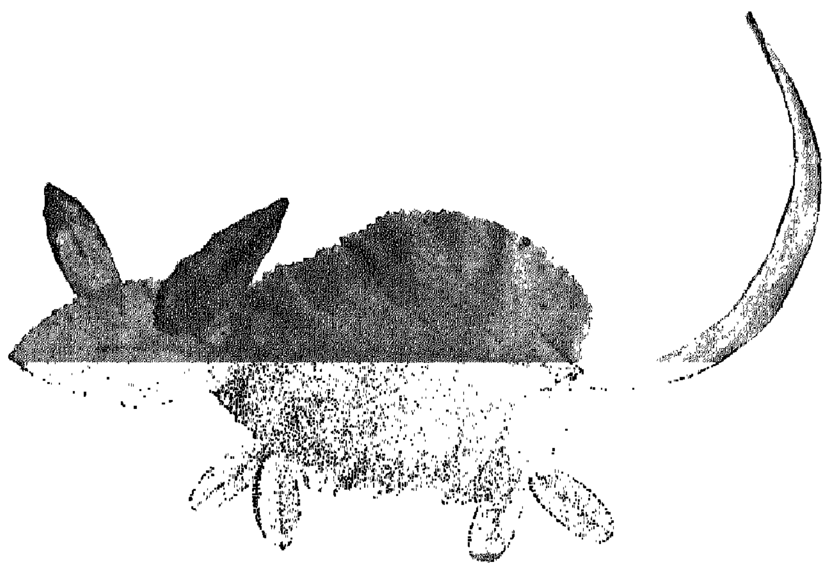
❖ क्या यह पेड़ फूल या फल देता है? बताओ कौन-से?

❖ इस पेड़ के पत्ते कैसे हैं?

❖ क्या इस पेड़ पर पक्षी या अन्य जानवर रहते हैं? कौन-से?



अपने इस दोस्त पेड़ के बारे में और भी बहुत-सी बातें पता करो और सभी को बताओ।

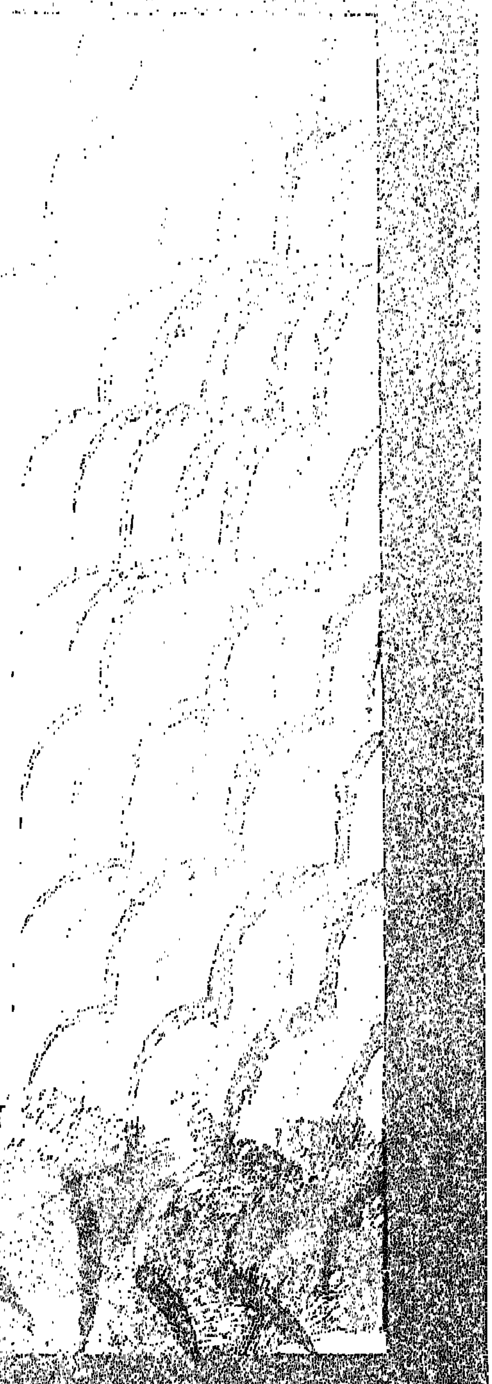


पानी रे पानी

पानी

मुँह धोऊँगा पानी से,
मुन्ना कहता नानी से।
प्यासे पानी पीते हैं,
पानी से सब जीते हैं।
जाने कबसे पानी है,
कितनी बड़ी कहानी है।
कहीं ओस है, बर्फ कहीं,
पानी ही क्या भाप नहीं?
सब रूपों में पानी है,
कहती ऐसा नानी है।
नदियाँ बहती कलकलकल,
झरने गाते छलछलछल।
तालों में लहराता जल,
कूँओं में आता निर्मल।
धरती पर जीवन लाया,
खेत सींचकर लहराया।
पर जब बाढ़ें लाता है,
भारी आफत ढाता है!

– श्रीप्रसाद



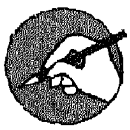
अपने इलाके में गाई या सुनाई जाने वाली पानी से जुड़ी कविताएँ और गीत बच्चे कक्षा में गाएँ। इससे अपने समुदाय के ज्ञान और कला के प्रति उनका लगाव बढ़ेगा।



❊ क्या तुम पानी पर कोई कविता या गाना जानते हो? कक्षा में सुनाओ।

❊ कविता में पानी से जुड़ी कौन-सी आवाज़ों की बात की गई है? कुछ आवाज़ें तुम भी बताओ।

❊ कवि ने क्या कहा है – पानी कहाँ-कहाँ है?



❊ नीचे दिए जिन कामों में पानी की ज़रूरत है, उन पर '✓' का निशान लगाओ।

खेलने में ☐	गाना गाने में ☐	चाय बनाने में ☐
आटा गूँधने में ☐	लिखने में ☐	नाव चलाने में ☐
चित्र बनाने में ☐	पौधों को उगाने में ☐	पंखा चलाने में ☐

❊ ऐसे चार काम लिखो जो

♦ तुम पानी के बिना कर सकते हो।

__________ __________ __________ __________

♦ तुम पानी के बिना नहीं कर सकते।

__________ __________ __________ __________

❊ किसके लिए कितना पानी?

इन कामों में सबसे ज़्यादा पानी जिसमें लगता है, उसे पहले लिखो। बाकी को ज़्यादा से कम के क्रम में लिखो।

कामः नहाने में, पीने में, घर धोने में, खेत में पानी देने में, आटा गूँधने में।

1. __________ 2. __________ 3. __________

4. __________ 5. __________

कहाँ से मिलता है पानी

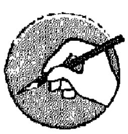
तुमने कविता में नदी, झरने, तालाब और कुएँ के बारे में पढ़ा। इनसे हमें पानी मिलता है। तुम पानी कहाँ-कहाँ से लाते हो? तुम्हारे घर में या घर के पास इनमें से जो-जो हैं, उन पर ◯ लगाओ।

झील, कुआँ, तालाब, झरना, सागर, नदी,

नहर, ट्यूबवैल, नल, नलकूप, टाँका, गर्मसोता



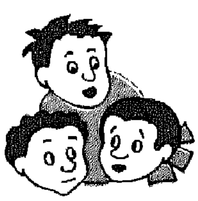
क्या तुमने कभी ज़मीन में से गर्म पानी निकलते देखा है? कहाँ?



- क्या तुम्हारे गाँव या शहर में कोई नदी बहती है? यदि हाँ तो उसका नाम क्या है? ____________________
- क्या तुम कुछ नदियों के नाम जानते हो? उनके नाम लिखो।

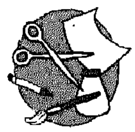
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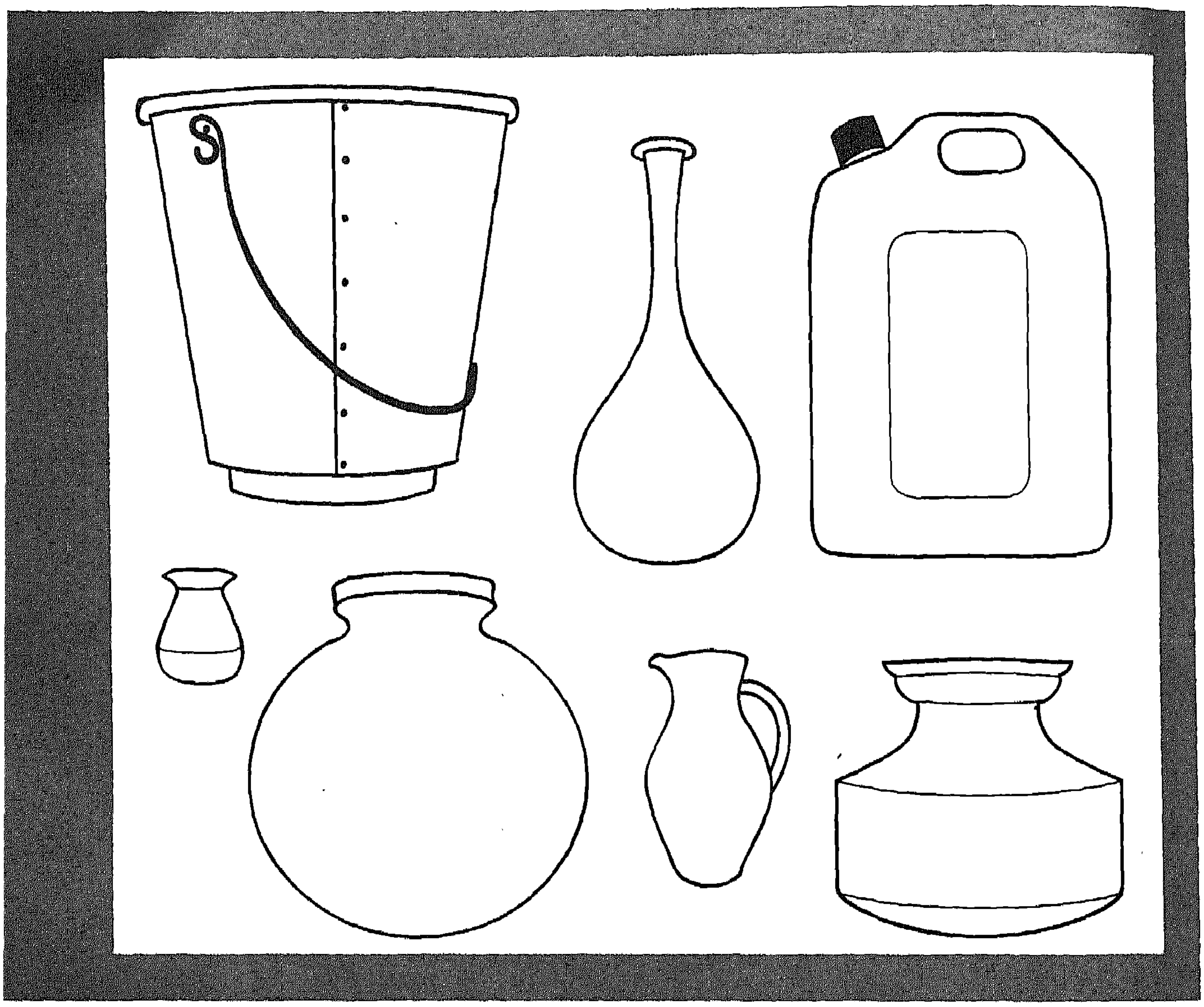


- तुम्हारे घर में पीने का पानी कहाँ से आता है?
- क्या पानी लाने घर से दूर जाना पड़ता है? पानी लाने में कितना समय लगता है?
- क्या आस-पास के सभी लोग वहीं से ही पानी लेते हैं?
- क्या ऐसे भी कुछ लोग हैं, जिनको वहाँ से पानी भरने नहीं दिया जाता?
- पानी को भरकर रखने की ज़रूरत क्यों पड़ती है?
- तुम्हारे घर के लिए पानी भरने का काम कौन-कौन करते हैं?

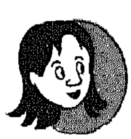
कई जगह कुछ लोगों को आम स्रोत से पानी नहीं लेने दिया जाता। इस पर चर्चा करना ज़रूरी है, जिससे भेदभाव जैसे विषयों के प्रति संवेदनशीलता बढ़े।



❋ नीचे दिए गए चित्रों में से उन में रंग भरो, जिनमें तुम पानी भरकर रखते हो।



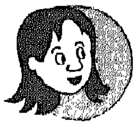
❋ तुम्हारे घर में यदि किन्हीं और चीज़ों में पानी भरकर रखा जाता है, तो कॉपी में उनका चित्र बनाओ और नाम भी लिखो।



चित्र में दिए सभी बर्तनों में यदि ऊपर तक पानी भरा हो तो –

1. किस बर्तन में सबसे कम पानी होगा?
2. किस बर्तन में सबसे ज़्यादा पानी होगा?

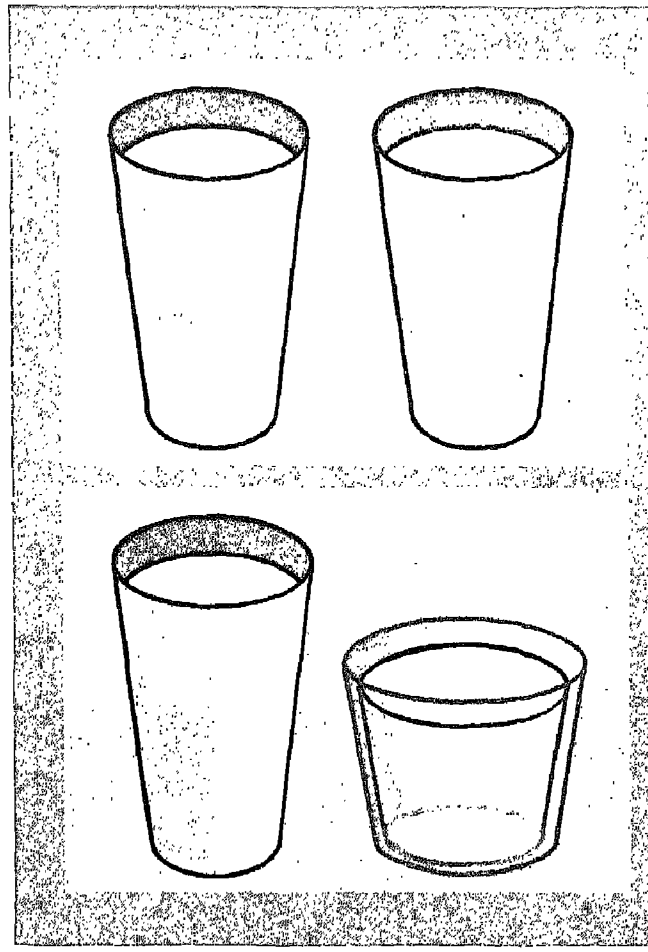
यह तुम कैसे कह सकते हो?



छुटकी चकराई

हिरेन और छुटकी को बहुत गर्मी लग रही थी। अंकल ने कहा – रुको, मैं तुम्हें आम का पन्ना देता हूँ। उन्होने दो स्टील के गिलास भर कर बच्चों को पकड़ाए। पर छुटकी ने ज़िद पकड़ी – मुझे तो काँच के गिलास में ही पीने में मज़ा आता है। अंकल ने पन्ना एक काँच के गिलास में पलट दिया। पर नहीं, छुटकी फिर भी नहीं मानी। बोली – अंकल! आपने तो मुझे कम दिया है।

तुम्हें क्या लगता है? क्या छुटकी के गिलास में कम पन्ना था?





पानी कहाँ-कहाँ से मिलता है? वर्ग पहेली में ढूँढ़ो और ◯ लगाओ। क्या तुम दस और ढूँढ़ पाए?

बा	व	ड़ी	झी	न
रि	सा	कु	आँ	ल
श	सो	ग	झ	ता
च	न	ह	र	ला
श्मा	दी	टाँ	का	ब

'छुटकी चकराई' को करके दिखाएँ, फिर बच्चों से पूछें।

इनमें से जो अलग है उस पर ◯ लगाओ और बताओ क्यों?

- नदी, पहाड़, तालाब, नल, सोता।
- नहाना, कपड़े धोना, तैरना, कंघी करना, आटा गूँधना।
- मछली, बत्तख, बंदर, मगरमच्छ, कछुआ।
- कार, नाव, बस, रेलगाड़ी, साइकिल।

रंगों से खेल

एक कागज़ को बीच में से मोड़ो। अब खोलकर रंगों की कुछ बूँदें डालो। कागज़ को फिर से मोड़कर दबा दो। खोलकर देखो क्या बना?



हमारा पहला स्कूल

स्कूल में हम कितनी सारी बातें सीखते और समझते हैं। पर जानते हो, हमारा पहला स्कूल कौन-सा है? वह है हमारा परिवार। हम अपने परिवार से ही सबसे पहले सीखना शुरू करते हैं। हम अपने परिवार से सबसे ज्यादा करीब से जुड़े होते हैं। पर हम उसके बारे में शायद ही कभी सोचते हैं। आओ, अपने परिवार के बारे में सोचें और बातें करें।

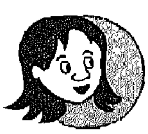
अपने परिवार का चित्र बनाओ। यदि फोटो है तो वह चिपकाओ।

❋ तुम्हारे परिवार में कौन-कौन हैं? उनका नाम और उनसे तुम्हारा क्या रिश्ता है, लिखो।

नाम	तुमसे रिश्ता	नाम	तुमसे रिश्ता
________	________	________	________
________	________	________	________
________	________	________	________

अपने परिवार के दो लोगों में आपस का रिश्ता लिखो – जैसे पति-पत्नी भाई-बहन, माँ-बेटी...।

परिवार के दो लोगों का नाम		आपसी रिश्ता



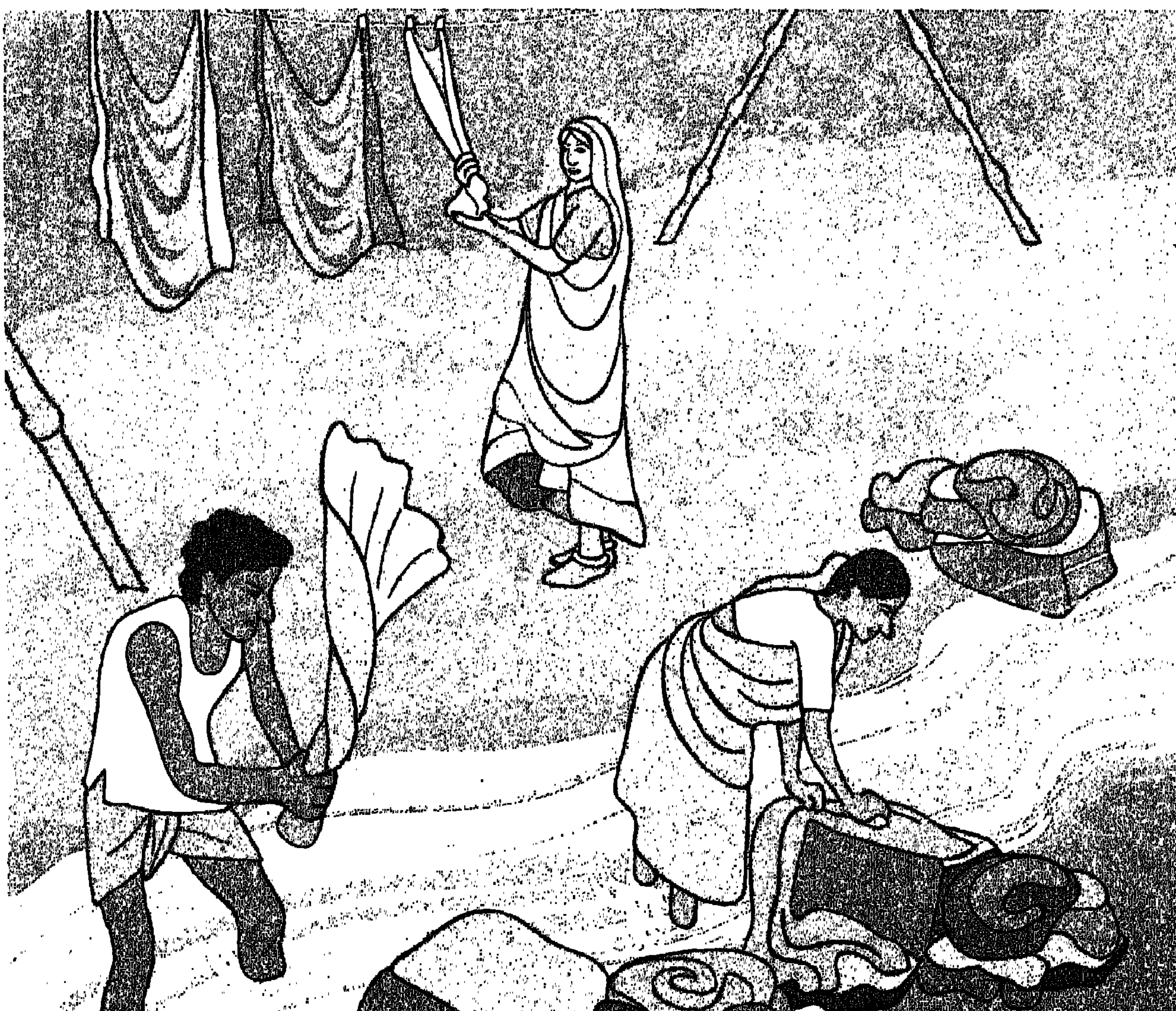
यहाँ कुछ लोगों के चित्र बने हैं। इनमें दो लोग बिल्कुल एक जैसे दिखते हैं। इनका आपस में क्या रिश्ता हो सकता है?



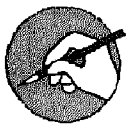
तुम्हारी कौन-सी बात परिवार में किसी से मिलती-जुलती है – जैसे तुम्हारी आवाज़, तुम्हारी आँखें, तुम्हारे बाल, तुम्हारी चाल...? किससे और कैसे?

तुम्हें घर में प्यार से किस नाम से बुलाते हैं? तुम अपने घर के लोगों को किस-किस तरह से बुलाते हो?

आओ, अब अनवरी के परिवार के बारे में कुछ पढ़ें।



अनवरी के परिवार के सभी बड़े लोग धोबी का काम करते हैं। परिवार के सभी सदस्य अपनी-अपनी तरह से कपड़े धोने, सुखाने, इस्त्री करने में हाथ बँटाते हैं। अनवरी और उसका चचेरा भाई तौफ़ीक भी अब यह काम सीख रहे हैं।



- क्या तुम्हारा परिवार भी मिलकर कोई काम-धंधा करता है? यदि 'हाँ' तो क्या?

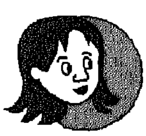
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- इस काम में तुम क्या मदद करते हो?

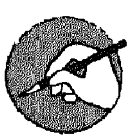
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हम परिवार में एक-दूसरे से बहुत कुछ सीखते हैं। अनवरी के चाचा ने उसे और परिवार के सभी बच्चों को साइकिल चलाना सिखाया।



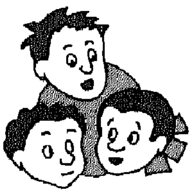
तुमने भी अपने परिवार से बहुत कुछ सीखा है। क्या और किससे? क्या किसी ने तुमसे भी कुछ सीखा है?



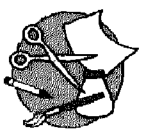
कुछ और बातों के बारे में सोचो और लिखो जैसे –

- जब मैं दु:खी होती हूँ, तब मैं __________ के पास जाती हूँ।
- जब मैं पुराने दिनों के बारे में जानना चाहती हूँ, तब मैं __________ के पास जाती हूँ।
- जब मैं अपनी कुछ राज़ की बात बताना चाहती हूँ, तब मैं __________ के पास जाती हूँ।
- जब मुझसे कोई गलती हो जाती है तो मैं __________ के पास जाती हूँ।

जूते बाहर उतारकर ही घर में आना – यह सुरेखा के घर का रिवाज़ है। लेकिन उसके कुछ दोस्त जूते-चप्पल पहनकर घर के अंदर आ जाते हैं। इससे सुरेखा के बाबा नाराज़ होते हैं।



क्या तुम्हारे परिवार के अपने कुछ रिवाज़ हैं? कौन-कौन से?



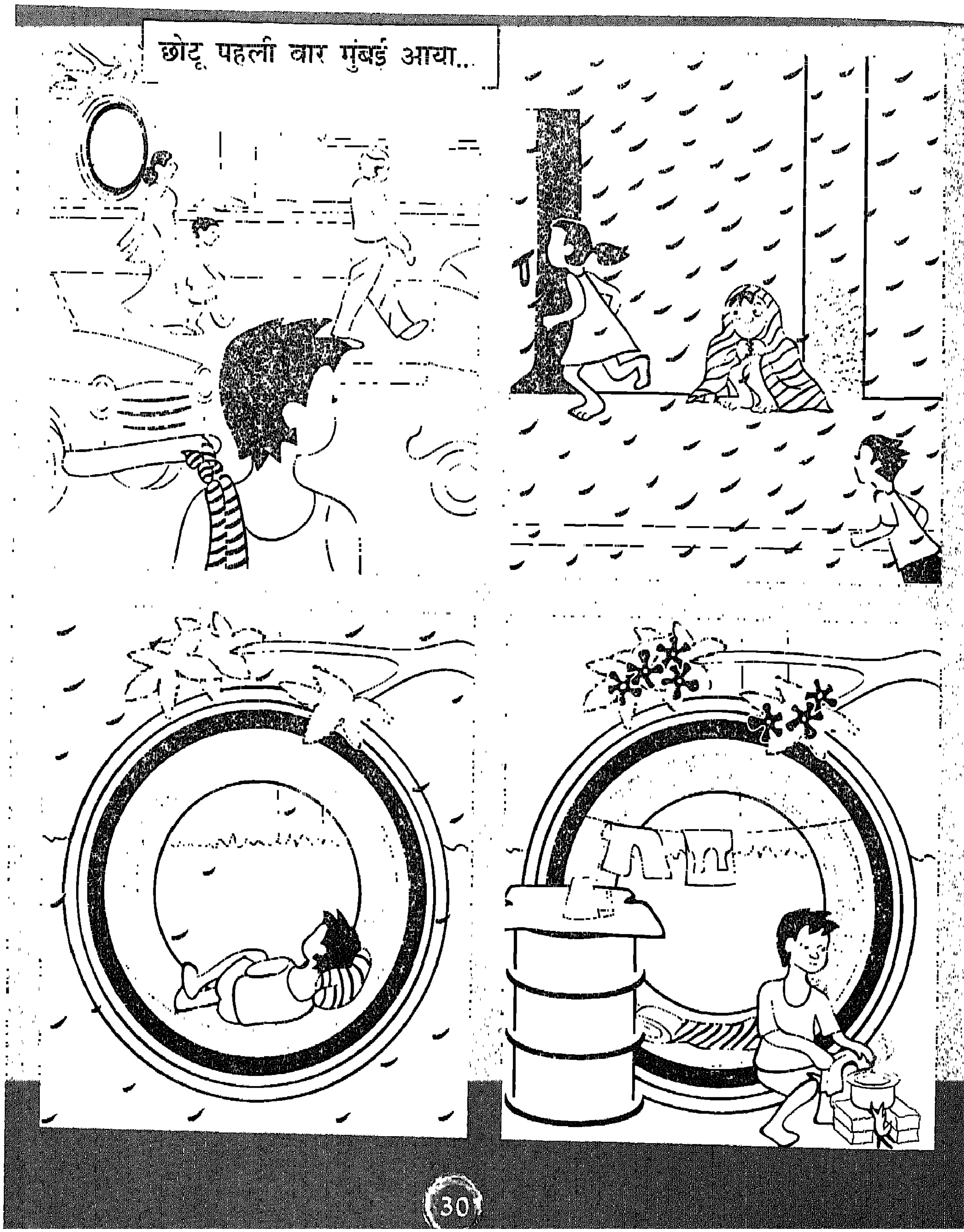
क्या तुम्हारे परिवार में किसी की कोई खास आदत हैं जैसे - ज़ोर से हँसना, खुश होने पर गाना आदि – उनकी तरह करके दिखाओ।

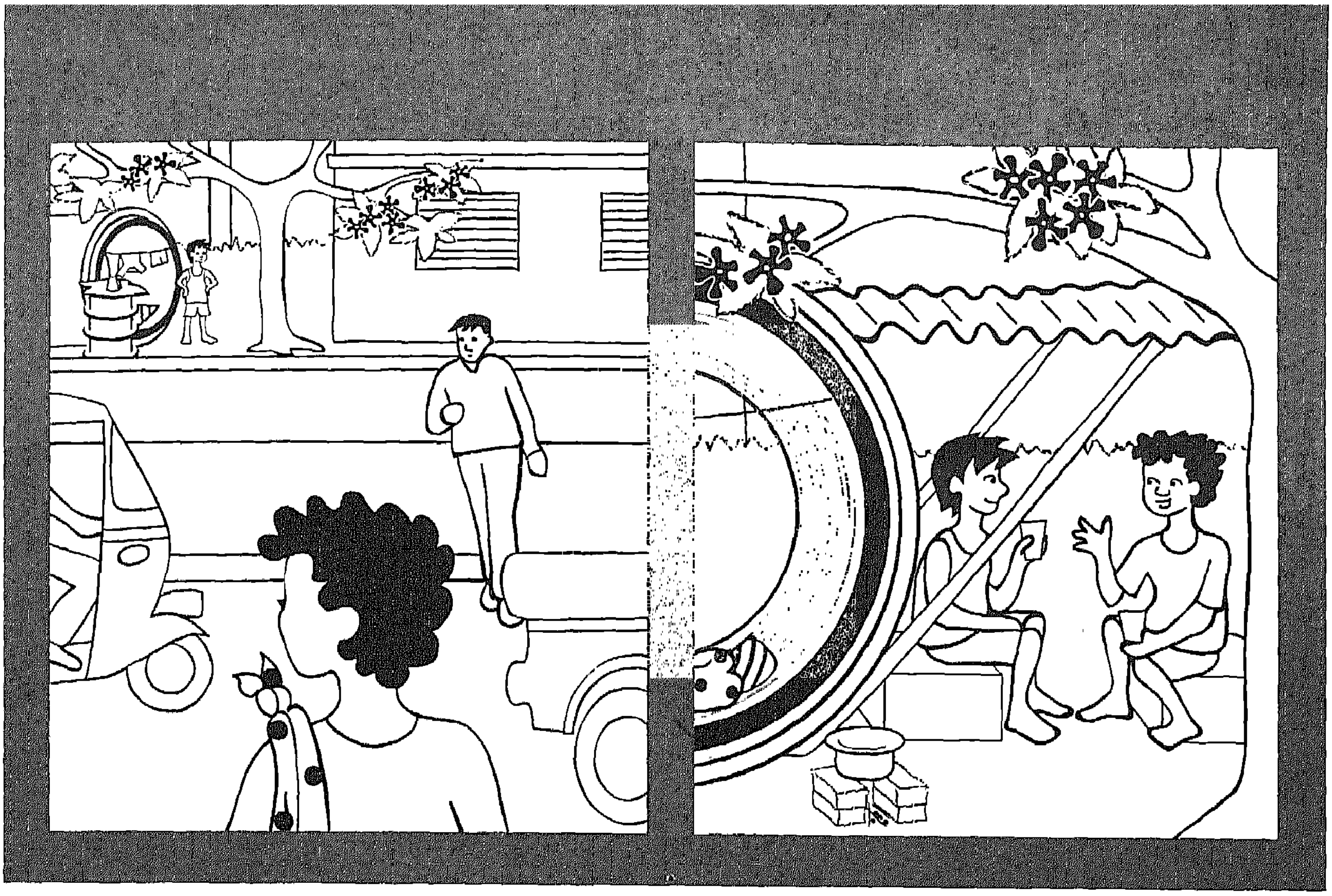


- तुम अपने परिवार में बड़ों की इज़्ज़त कैसे करते हो? अपने आस-पास देखो लोग क्या-क्या तरीके अपनाते हैं।
- बड़े जब बच्चे थे

घर के किसी बड़े को उनके बचपन का कोई मज़ेदार किस्सा बताने को कहो।

बच्चों से अपने परिवार वालों के हँसने, गाना गानें आदि के तरीकों के बारे में बातचीत करवाई जाए। इससे वे अपने परिवार के लोगों की ख़ासियत भी पहचान सकेंगे।

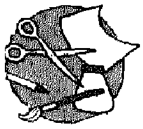

छोटू पहली बार मुंबई आया..



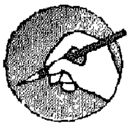
चित्रों में छोटू की कहानी बताई गई है। देखकर बताओ –

- छोटू ने पाइप को देखकर क्या सोचा?
- छोटू ने पाइप का किस तरह से इस्तेमाल किया है?
- छोटू ने पाइप और आस-पास की जगह को कौन-से हिस्सों में बाँटा है?
- छोटू को इस घर के कौन-से हिस्से में ज़्यादा समय बिताना पसंद होगा?
- छोटू ने मोनू को भी पाइप में रहने को क्यों कहा होगा?

मकान कब घर बन जाता है, इस पर चर्चा करवाना 'मकान' और 'घर' के अंतर को स्पष्ट करेगा।



अपने घर का चित्र कॉपी में बनाओ। उसमें रंग भी भरो।



- तुम्हारे घर में कौन-कौन लोग रहते हैं?

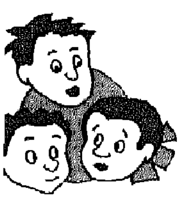
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__________ __________ __________ __________

- छोटू ने पाइप को अलग-अलग हिस्सों में बाँटा। तुम भी अपने घर के अलग-अलग हिस्सों के नाम लिखो।

__________ __________ __________ __________

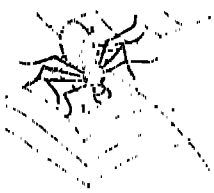
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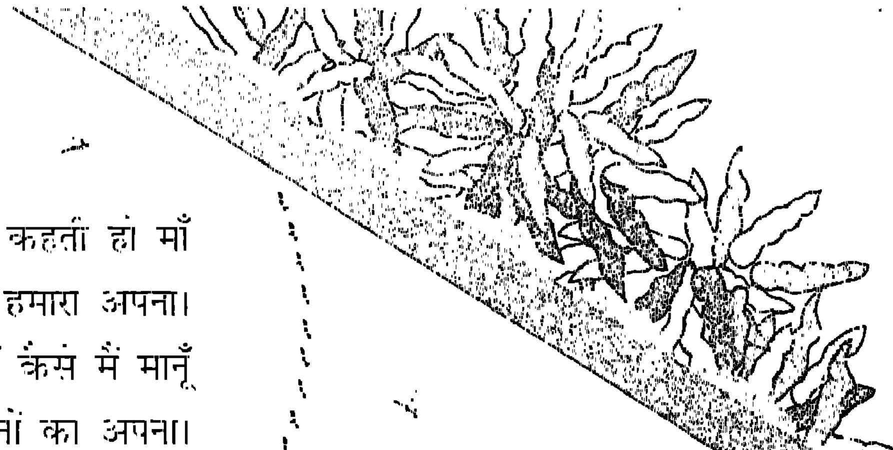


- एक दिन में तुम घर के किस हिस्से में कितना समय बिताते हो?
- क्या घर का कोई ऐसा हिस्सा है जिसमें घर के कुछ लोग ज़्यादा समय रहते हैं?
- क्या घर का कोई ऐसा भी हिस्सा है जिसमें घर का कोई खास व्यक्ति जाता ही नहीं हैं, या बहुत कम जाता है?

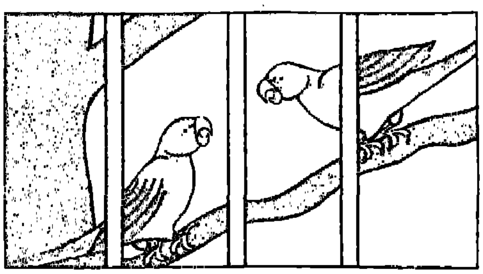
हमारे घरों में हम लोग तो रहते ही हैं, पर हमारे साथ-साथ कुछ जानवर भी रहते हैं – कुछ हमारी मर्ज़ी से, कुछ हमारी इज़ाज़त के बगैर!

बच्चों से उनके घर की बातचीत को संवेदनशीलता से करने की ज़रूरत है। घर अलग-अलग तरह के होते हैं। यह बात ध्यान में रखते हुए पाठ में कमरों के बजाए 'घर के हिस्सों' का प्रयोग किया गया है। घर के हिस्सों में विशिष्ट व्यक्तियों का जाना या न जाना उनके घर के तौर-तरीकों को दर्शाता है।





सदा यही तो कहती हो माँ
घर यह सिर्फ हमारा अपना।
लेकिन माँ कैसे मैं मानूँ
घर तो यह कितनों का अपना।



देखो तो कैसे ये चूहे
खेल रहे हैं पकड़म-पकड़ी।
कैसे मच्छर टहल रहे हैं
कैसे मस्त पड़ी है मकड़ी!



और छिपकली को तो देखो
चलती है जो गश्त लगाती!
अरे कतारें बाँधें-बाँधें
कहाँ चीटियाँ दौड़ी जातीं।





और उधर आँगन में देखो
पंछी कैसे झपट रहे हैं।
बिल्कुल दीदी और मुझ जैसे
किसी बात पर झगड़ रहे हैं।

इसीलिए तो कहता हूँ माँ
घर ना समझो सिर्फ हमारा
सदा-सदा से जो भी रहता
सबका ही है घर यह प्यारा।

बच्चा टोली (भारत ज्ञान विज्ञान समिति)



❖ ऐसे दो जानवरों के चित्र बनाओ, जो हमारी इज़ाज़त के बिना हमारे घर में रहते हैं। चित्र के नीचे उनका नाम भी लिखो।

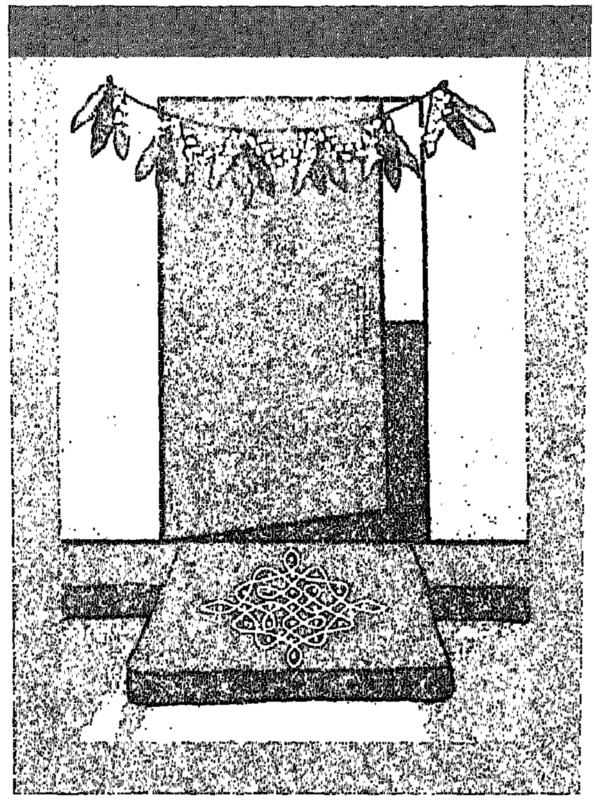
❖ तुम अपने घर को कैसे साफ़ रखते हो?

❖ तुम्हारे घर में सफ़ाई का काम कौन-कौन करते हैं?

❖ तुम अपने घर का कूड़ा-कचरा कहाँ डालते हो?

❖ क्या तुम्हारे घर के आस-पास सफ़ाई रहती है?

लता का घर इस तरह से सजा है।

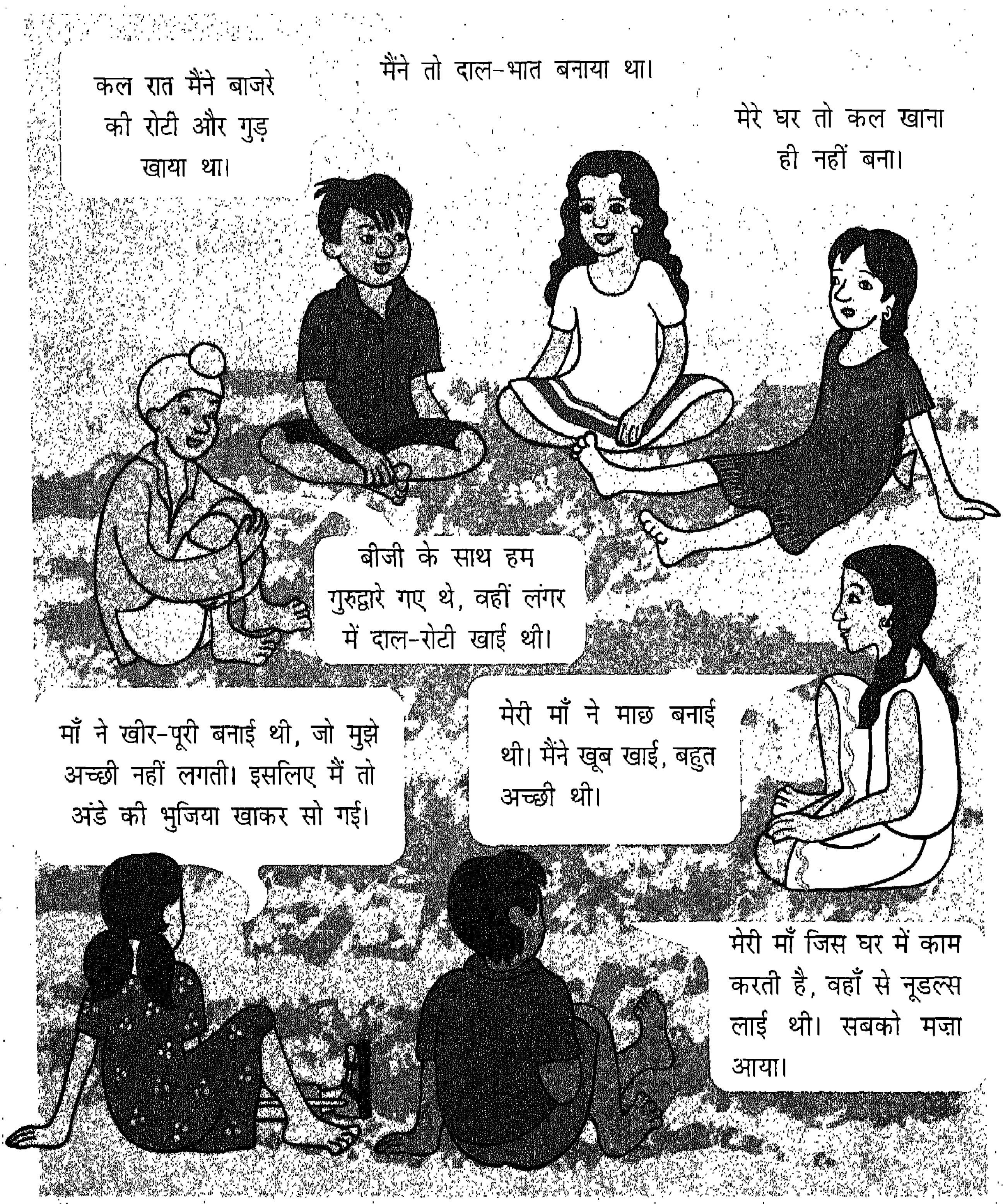


क्या तुम अपने घर को किसी खास तरह से सजाते हो? कब और कैसे सजाते हो?

अपने साथियों से पता करो कि वे अपने घर को कैसे और कब सजाते हैं?

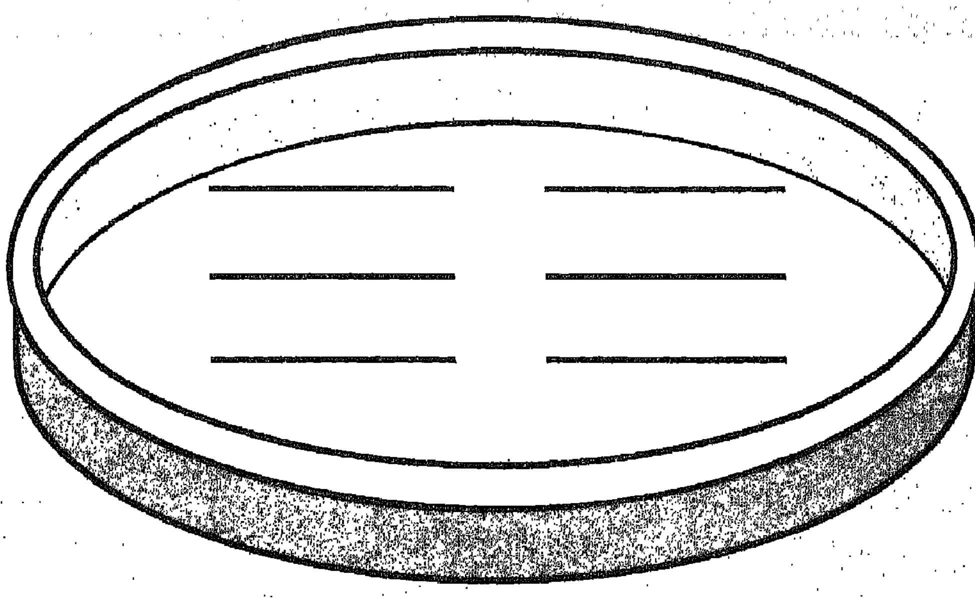
तुम अपने घर को किन-किन चीज़ों से सजाते हो? उनके नाम लिखो।

पाठ में प्रत्येक बच्चे से उसके घर की सजावट के बारे में पूछा गया है। बच्चों से घर सजाने की प्रकिया पर बातचीत से, स्थानीय सामग्री के उपयोग तथा त्योहार मनाने के महत्त्व को उभारा जा सकता है।



कल रात मैंने बाजरे की रोटी और गुड़ खाया था।
मैंने तो दाल-भात बनाया था।
मेरे घर तो कल खाना ही नहीं बना।
बीजी के साथ हम गुरुद्वारे गए थे, वहीं लंगर में दाल-रोटी खाई थी।
माँ ने खीर-पूरी बनाई थी, जो मुझे अच्छी नहीं लगती। इसलिए मैं तो अंडे की भुजिया खाकर सो गई।
मेरी माँ ने माछ बनाई थी। मैंने खूब खाई, बहुत अच्छी थी।
मेरी माँ जिस घर में काम करती है, वहाँ से नूडल्स लाई थी। सबको मज़ा आया।

तुमने कल क्या-क्या खाया? थाली में उनके नाम लिखो।



अपनी-अपनी थाली में जो लिखा है, उसे ब्लैकबोर्ड पर लिखो।

- क्या तुम्हारी कक्षा में कल सबने एक जैसा खाना खाया था? ऐसा क्यों?
- चित्र में तुमने देखा कि एक बच्चे के घर खाना बना ही नहीं। यह किन कारणों से हो सकता है?
- क्या तुम्हारे साथ कभी ऐसा हुआ है कि भूख लगी हो और कुछ भी खाने को नहीं मिला? अगर 'हाँ' तो क्यों?
- तुम्हें कैसे पता चलता है कि भूख लगी है?
- जब तुम्हें भूख लगती है तब तुम्हें कैसा महसूस होता है?

बच्चे एक खुले माहौल में अपनी बात बेझिझक कहते हैं। एक-दूसरे के खाने के बारे में सुनकर हम अपने खाने से जुड़ी संकुचित सोच से हट सकते हैं। इसी से दूसरे लोगों के बारे में हमारी समझ बढ़ेगी। बच्चों से संबंध बनाना और ऐसा माहौल बनाना ज़रूरी है जहाँ उनकी बात संवेदनशीलता से सुनी जाए।

विपुल के परिवार में कुछ लोग कई चीज़ें नहीं खाते, जो वह खाता है। सोचो उसके परिवार के लोग वे चीजें खाते ही नहीं या खा नहीं सकते?

आओ विपुल के परिवार के बारे में पढ़ें –

स्कूल से घर जाते-जाते विपुल ने एक भुट्टा खरीदा। भुट्टा खाते-खाते विपुल घर में घुसा और माँ से पूछा – माँ छुटकी कहाँ है? पहले तो मैं उसे ही देखूँगा।

माँ ने हँसते हुए कहा – छुटकी ऊपर कमरे में है।

विपुल ने दादी का हाथ पकड़कर कहा – दादी, तुम भी चलो न!

माँ ने कहा – रूको, मैंने बा की रोटी दाल में डालकर रखी है। पहले वो खा तो लें।

बेटा आज तो दाल में शक्कर ठीक से डाली है न? यहाँ नागपुर आकर तुम लोग अपना खाना भूलते जा रहे हो – दादी ने माँ से कहा।

माँ ने जवाब दिया – बा, मैनें चख कर देखी है, बढ़िया बनी है।

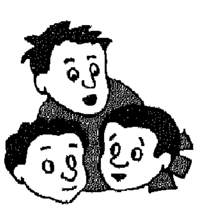
मैं दादी का खाना भी ऊपर ले जाता हूँ – कहते हुए विपुल ने थाली उठाई और फटाफट सीढ़ियाँ चढ़ गया। दादी जल्दी चढ़ो न! – विपुल ने पुकारा।

दादी ने कहा – जब मैं तुम्हारी उम्र की थी तब मैं इतनी देर में सीढ़ियाँ तो क्या, पहाड़ भी चढ़ जाती थी।

विपुल ने अंदर जाकर अपना भुट्टा मामी को थमाया और हाथ धोकर छुटकी को उठा लिया।

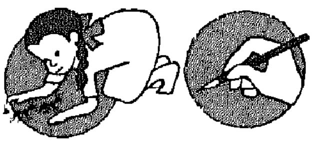
अचानक छुटकी ने रोना शुरू कर दिया।

यह अब ऐसे चुप नहीं होगी, इसे भूख लगी है – कहते हुए मामी छुटकी को दूध पिलाने बैठ गई।



- दादी सीढ़ियाँ जल्दी क्यों नहीं चढ़ पाईं?
- दादी को दाल किस तरह से खाना पसंद है?

- कहानी में जितने लोग आए, उनमें से कितने लोग भुट्टा खा पाएँगे? और क्यों?
- क्या सभी बूढ़े लोग भुट्टा नहीं खा पाते?
- चार महीने तक छुटकी केवल अपनी माँ का ही दूध पीएगी। वह ही उसका खाना है। सोचो, क्यों?

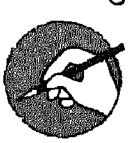


अपने आस-पास के बड़ों से पूछकर तालिका भरो –

	क्या-क्या खा पाते हैं	क्या-क्या नहीं खा पाते
 बच्चा	____________	____________
	____________	____________
 जवान	____________	____________
	____________	____________
 बूढ़ा	____________	____________
	____________	____________

यह तो थी कुछ चीज़ों को 'खा सकने' और 'नहीं खा सकने' की बात। क्या हम वे सभी चीज़ें खाते हैं जो हम खा सकते हैं? नहीं न!

आओ बात करें उन चीज़ों की जिन्हें हम खाते हैं।

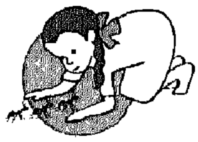


- जिन चीज़ों को तुम ज़्यादा खाते हो उन पर ◯ लगाओ।

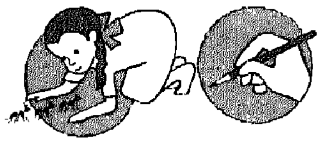
चावल   रागी   मक्का   बाजरा

गेहूँ   जई   कप्पा (टैपिओका)   जौ

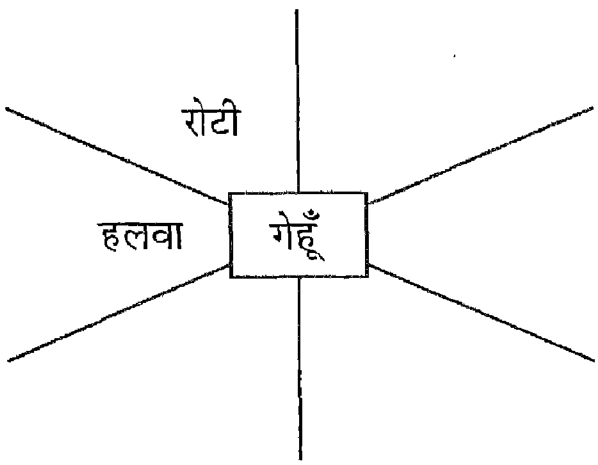
हमारा भोजन ज़्यादातर इन्हीं चीज़ों से बनता है। अलग-अलग जगहों पर इनमें से कुछ चीज़ों को अधिक खाया जाता है। जो चीज़ें जहाँ आसानी से पैदा होती हैं, वहाँ पर वे ज़्यादा खाई जाती हैं।

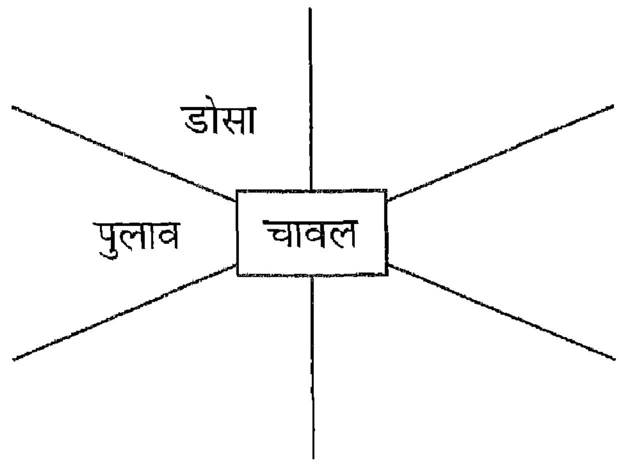


पता लगाओ, इनमें से कौन-कौन सी चीज़ कहाँ-कहाँ अधिक खाई जाती है।



हम लोग अलग-अलग चीज़ें तो खाते ही हैं। एक ही चीज़ का इस्तेमाल करके अलग-अलग भोजन भी बनाते हैं। पता करो और लिखो कि गेहूँ और चावल से क्या-क्या बनता है?





क्यों, कितनी चीज़ें लिखीं? इसी तरह अलग-अलग जगहों पर अलग-अलग तरह की दालें, सब्ज़ियाँ, फल, माँस आदि खाया ज़ाता है। कुछ लोग कुछ पसंद करते हैं, तो कुछ लोग कुछ और। अब बात करते हैं 'पसंद' और 'नापंसद' की।

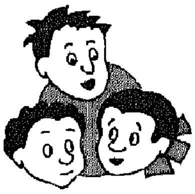


पसंद अपनी-अपनी

उन तीन चीज़ों के नाम लिखो जो तुम्हे खाने में पसंद है, और तीन चीज़ें जो तुम्हें नापसंद हैं।

पसंद ________ ________ ________

नापसंद ________ ________ ________



- क्या तुम्हारी पसंद-नापसंद तुम्हारे परिवार के लोगों से मिलती है?
- क्या तुम्हारी पसंद-नापसंद तुम्हारे दोस्त की पसंद-नापसंद से मिलती है?

आओ अब कुछ लोगों से बात करें और पता लगाएँ उन्हें क्या खाना अच्छा लगता है?

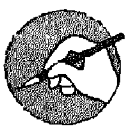






कहाँ क्या खाया जाता है यह आखिर निर्भर किस पर होता है? दिए गए कारणों में से जो तुम्हें सही लगे उस पर '✓' लगाओ। इसके अलावा जो कारण और हो सकते हैं वे खाली जगह में लिखो।

- वहाँ क्या आसानी से मिलता है।
- क्या खरीद सकते हैं।
- रीति-रिवाज़ पर।
- ____________________
- ____________________



⁜ जो चीज़ें खाई जाती हैं उन पर '✓' का निशान लगाओ। किसी के बारे में नहीं पता तो शिक्षक से पूछ लो।

केले के फूल	☐	मुर्गी का अंडा	☐	गोभी	☐
सैंजन के फूल	☐	अरवी के पत्ते	☐	माँस	☐
खुंबी	☐	चूहा	☐	कलौंजी	☐
कमल डंडी	☐	मछली	☐	केकड़ा	☐
लाल चींटी	☐	बाजरे की रोटी	☐	घास	☐
पिछले दिन की रोटी	☐	मेंढक	☐	आंवला	☐
नारियल का तेल	☐	ऊँटनी का दूध	☐	चने की रोटी	☐

⁜ खाने की कुछ ऐसी चीजों के नाम लिखो, जो तुमने कभी नहीं खाईं, लेकिन खाने का मन करता है।

______________ ______________ ______________ ______________

______________ ______________ ______________ ______________

चुप तुम रहो, चुप हम रहें

चलो, एक खेल खेलें। इस खेल में सब को बिना बोले अपनी बात दूसरों तक पहुँचानी है। सभी बच्चे सात-सात के गुटों में बँट जाओ।

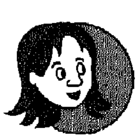
इस खेल में तुम्हारी टीचर सभी गुटों को एक-एक कागज़ की पर्ची देगी। हर पर्ची में कुछ लिखा होगा। सभी अपने-अपने गुट में पर्ची पढ़ेंगे। सभी गुटों को पर्ची के अनुसार मूक-नाटक तैयार करना है। इस बात का ध्यान रखना है कि बिना बोले ही सभी को अपनी बात दूसरों तक पहुँचानी है। तुम्हें अपने शरीर के अलग-अलग अंगों से ही अपनी बात कहनी है, जैसे – आँखों से, चेहरे के हाव-भाव से, हाथ के इशारों से।

जब सबका नाटक तैयार हो जाए तब सभी गुट एक-एक करके आएँ और सबके सामने अपना मूक-नाटक करें। सभी देखने वालों को यह बूझना होगा कि नाटक में क्या हो रहा है।

कैसा लगा यह खेल?

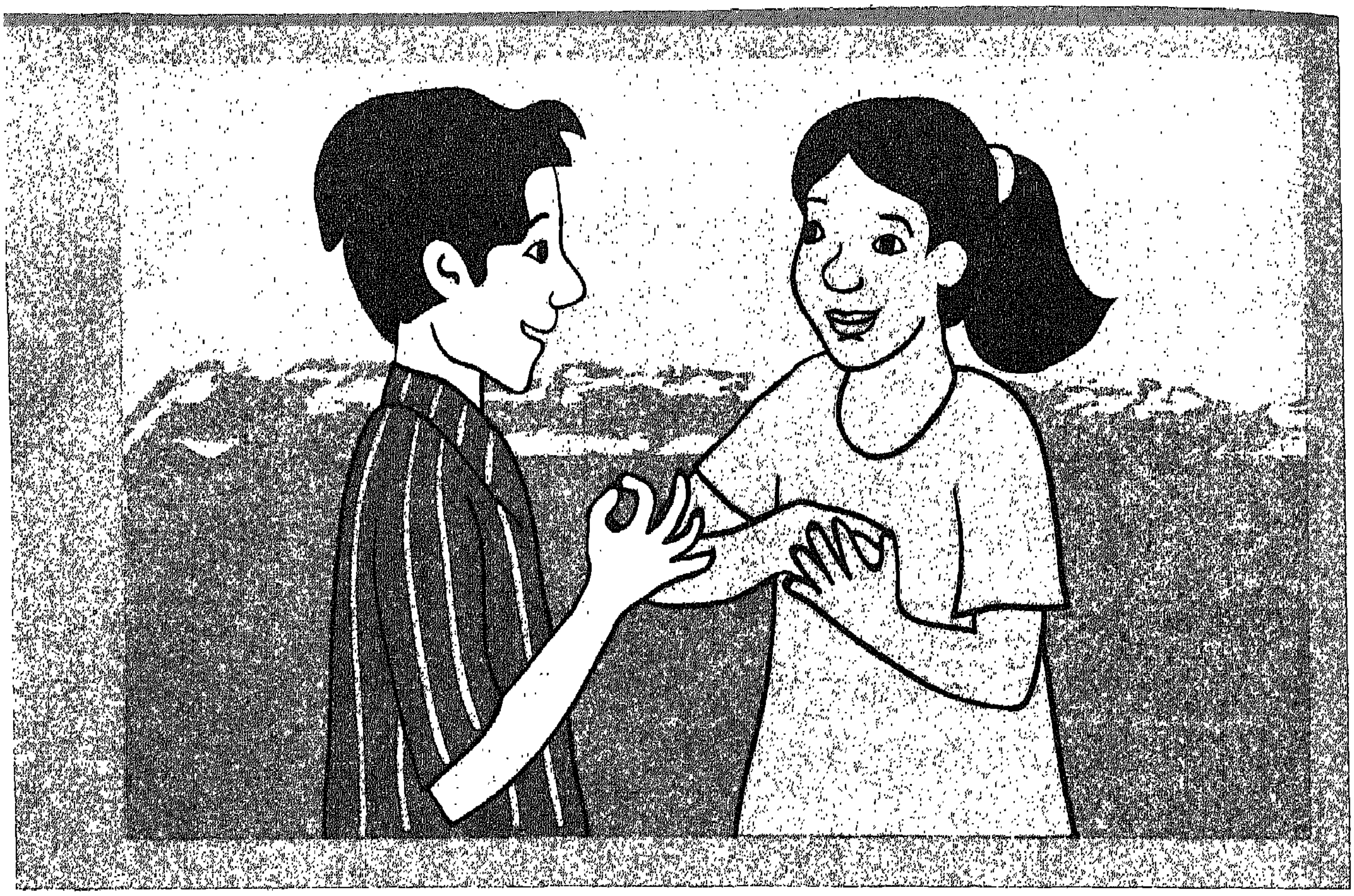
क्या बिना बोले नाटक करने में मुश्किल आई?

अगले पृष्ठ पर दिए गए चित्र को देखो। चित्र में बच्चे इशारों से बातें कर रहे हैं।



- क्या तुमने कभी किसी को इशारों से बातें करते देखा है?
- लोगों को इशारों में बात करने की ज़रूरत कब पड़ती है?

जिन घटनाओं को बच्चे समझ पाएँ, जिनसे स्वयं को जोड़ पाएँ, उनको चुनें ताकि बच्चे उन्हें प्रभावी ढंग से नाटक के रूप में प्रस्तुत कर पाएँ।



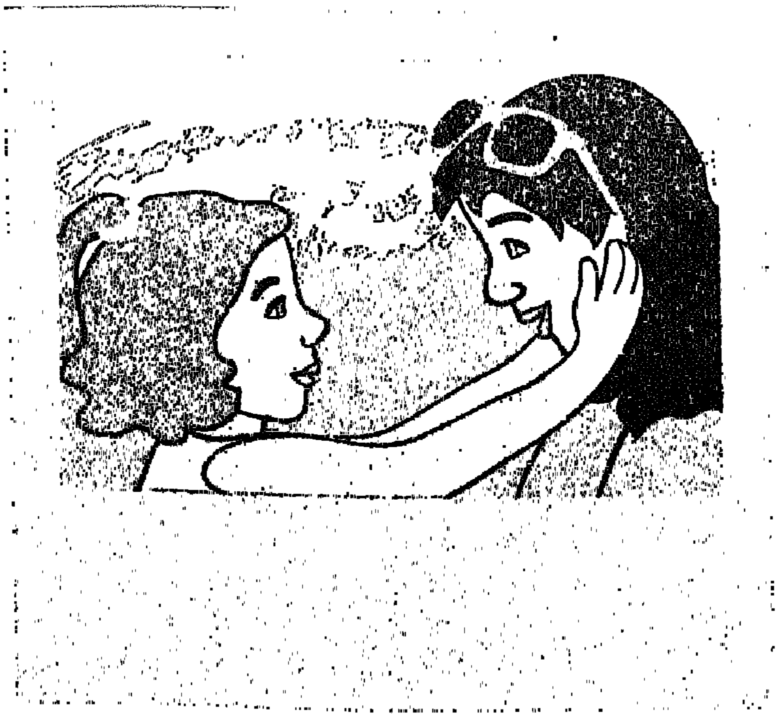
हम में से ज़्यादातर लोग बोल और सुन सकते हैं। पर कुछ ऐसे भी लोग हैं जो बोल और सुन नहीं सकते। ऐसे लोग दूसरों को अपनी बातें इशारों से समझाते हैं। दूसरों की बातें वह उनके होठों को देखकर समझने की कोशिश करते हैं।

हम सब भी तो सब कुछ नहीं कर पाते। हममें से कोई गाता अच्छा है, तो कोई कविता अच्छी लिखती है। कुछ बच्चे झट से पेड़ पर चढ़ जाते हैं, तो कुछ बहुत तेज़ दौड़ते हैं। कोई चित्र अच्छे बनाता है, तो कोई सुर में नहीं गा पाती। हम सब अपनी-अपनी तरह से खास हैं। स्कूल इसीलिए तो हैं कि सभी को एक-दूसरे से कुछ-न-कुछ सीखने का मौका मिले। सबकी तरह जो बच्चे बोल-सुन नहीं सकते, वे भी स्कूल जाकर पढ़ते-लिखते हैं। इन बच्चों को स्कूलों में इशारों से बातें करने की भाषा सिखाई जाती है।

आओ, अब एक बच्ची के बारे में पढ़े जो सुन नहीं सकती। वह बच्ची फिर भी कितना कुछ कर पाती है।

मेरी बहन सुन नहीं सकती

मेरी एक बहन है।
मेरी बहन सुन नहीं सकती।
मेरी बहन अनूठी है।
बहुत कम लोगों की बहनें ही मेरी बहन
की तरह होंगी।
मेरी बहन **पियानो** बजा सकती है।
वो पियानो के सुरों को
महसूस कर सकती है।
वो उंगलियों से छूकर पता कर लेती है
कि रेडियो चल रहा है या वो बंद है।
कूदने, उछलने और
कलाबाज़ियां लगाने में
उसे बड़ा आनंद आता है।
मेरी बहन अब मेरे ही
स्कूल में जाने लगी है।



वैसे माँ, उसे घर पर बोलने की और
होंठ पढ़ने की ट्रेनिंग देती हैं।
क्लास में टीचर और अन्य बच्चे मेरी
बहन के कहे
सभी शब्दों को समझ नहीं पाते हैं।
वो जो कुछ कहना चाहती है उसे वो
अच्छी तरह नहीं कह पाती है।
कल मैंने धूप का चश्मा पहन रखा था।
उसका फ्रेम काफ़ी बड़ा था।
उसके काँच भी एकदम काले थे।
जब मैं बोल रही थी तो मेरी बहन ने
मुझ से चश्मा उतारने को कहा।
मेरी भूरी आँखे, उसकी भूरी आँखों से,
न जाने क्या-क्या कहती हैं?

जॉन वाइटहाउस पीटरसन की कविता के कुछ अंश
(अनुवाद : अरविंद गुप्ता)

इस पाठ में चर्चा हो सकती है कि हम सब में अलग अलग तरह की क्षमताएँ हैं। बच्चों के अपने अनुभवों को शामिल करते हुए इस विषय पर संवेदनशीलता बढ़ाई जा सकती है।

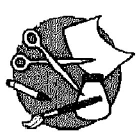
हम अपनी आँखों से बहुत कुछ कहते हैं। छोटे बच्चे तो बोलना सीखने से पहले ही कितना कुछ कहते हैं – चेहरे से, हाथों से। वे कितना कुछ समझते भी हैं।



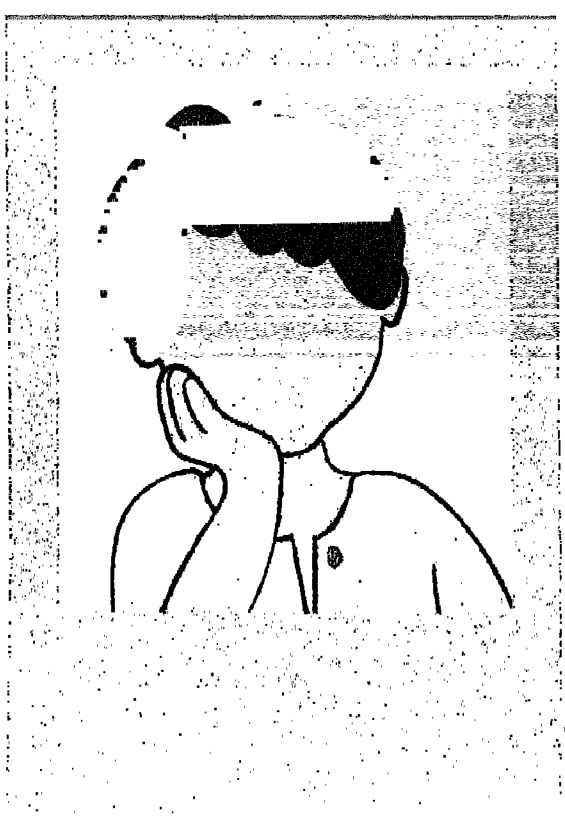
चेहरा है आईना



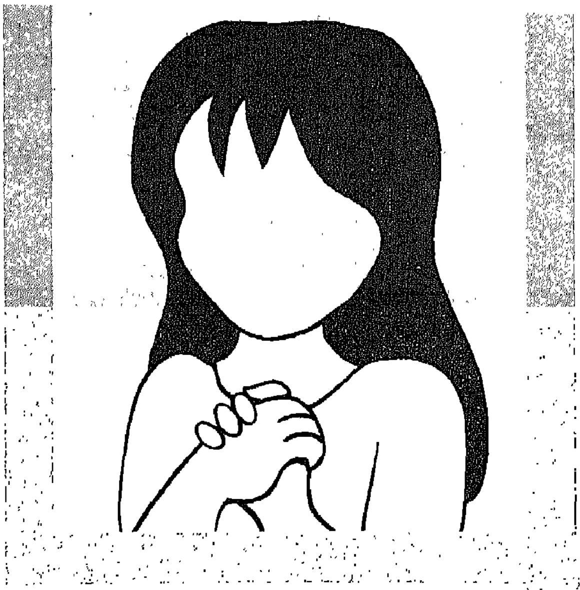
अपने आस-पास के छोटे बच्चों (करीब 6-8 महीनों) को देखो। वे अपनी बात बिना बोले कैसे कहते हैं?



तुम सोच रहे होगे, कि ये कैसे चेहरे हैं? न इनमें आँखें हैं, न नाक और न ही मुँह। ये सब तो तुम्हें बनाने हैं, पर साथ में जो लिखा है, उसे पढ़कर।

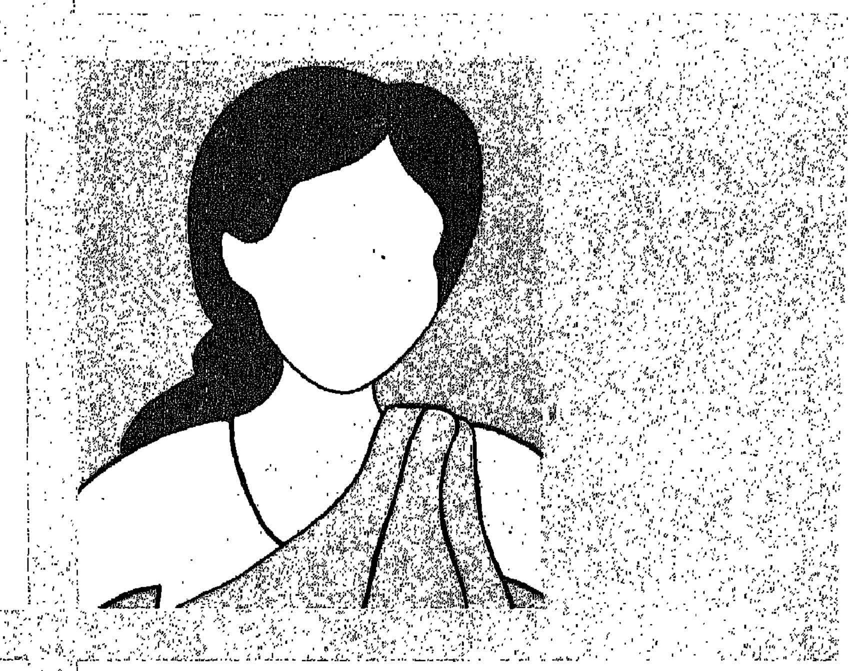


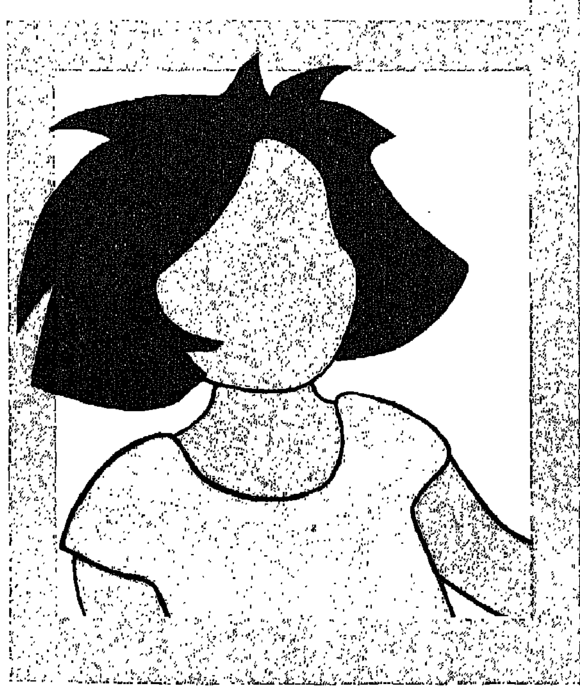
यह आफ़ताब है। उसका खिलौना गिर कर टूट गया है। वह दुखी है। कैसा होगा उसका चेहरा?



यह जूली है। कल ही उसकी छोटी बहन पैदा हुई है। वह बहुत खुश है। उसका चेहरा बनाओ।

यह यामिनी की अम्मा है। आज यामिनी ने जब रसोई से अचार की शीशी निकाली, शीशी गिर कर टूट गई। अम्मा का चेहरा बनाओ।

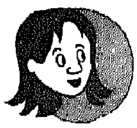




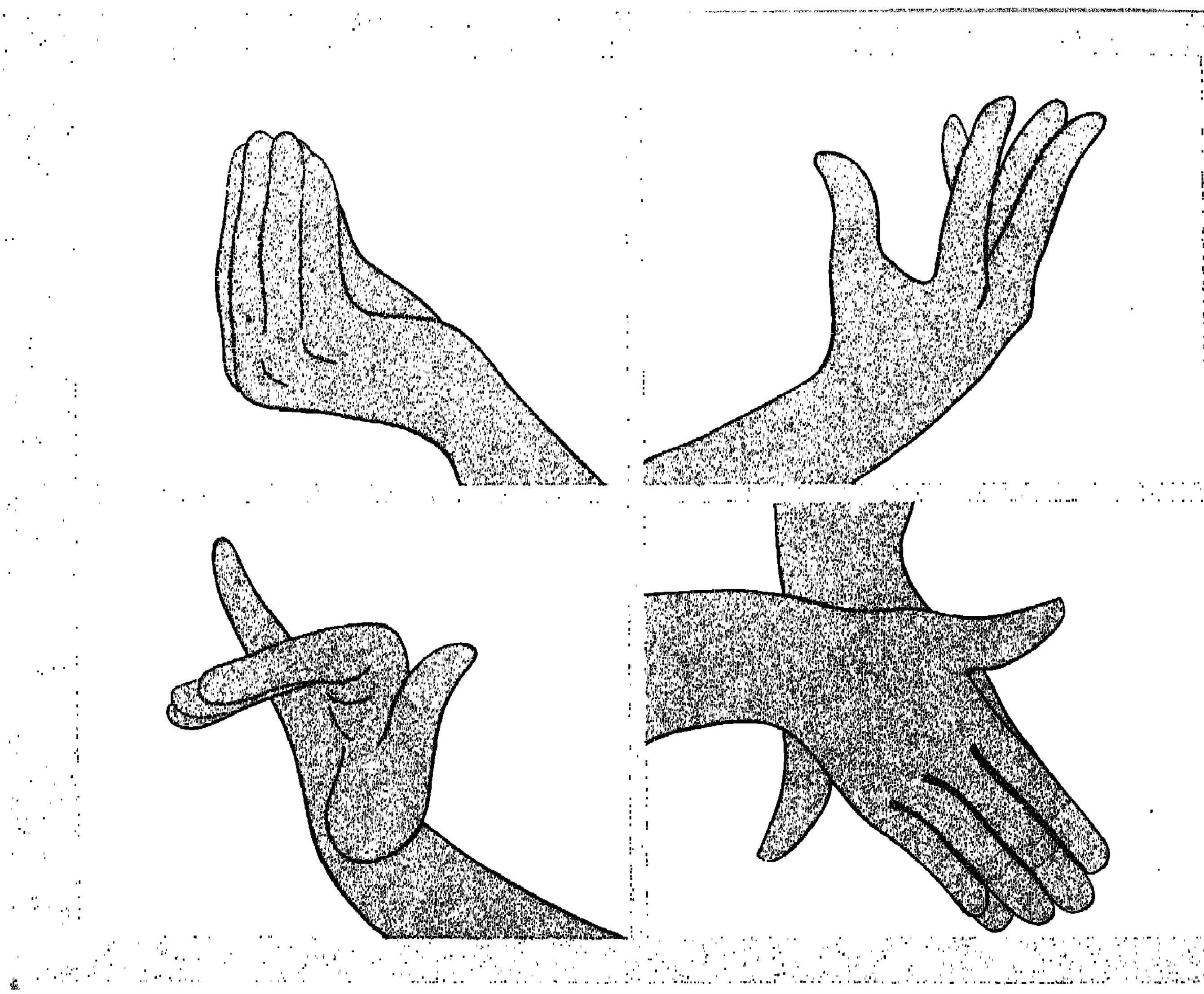
यह रेहाना है। रेहाना को कुत्तों से बहुत डर लगता है। वह खेल रही थी। अचानक से उसके सामने एक कुत्ता आ गया। कैसा होगा रेहाना का चेहरा?

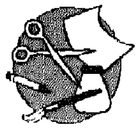
चेहरे को देखकर हमें पता चल जाता है कि कौन दुखी है, कौन खुश है और कौन गुस्से में। तुम्हारे साथ कभी ऐसा हुआ है कि तुमने कोई शरारत की हो और माँ को तुम्हारा चेहरा देखकर ही समझ में आ गया हो?

नाच से भी हम अपनी बात दूसरों तक पहुँचा सकते हैं। नाच में इशारों और चेहरे के हाव-भाव का इस्तेमाल करते हैं। इन्हें मुद्राएँ कहते हैं।



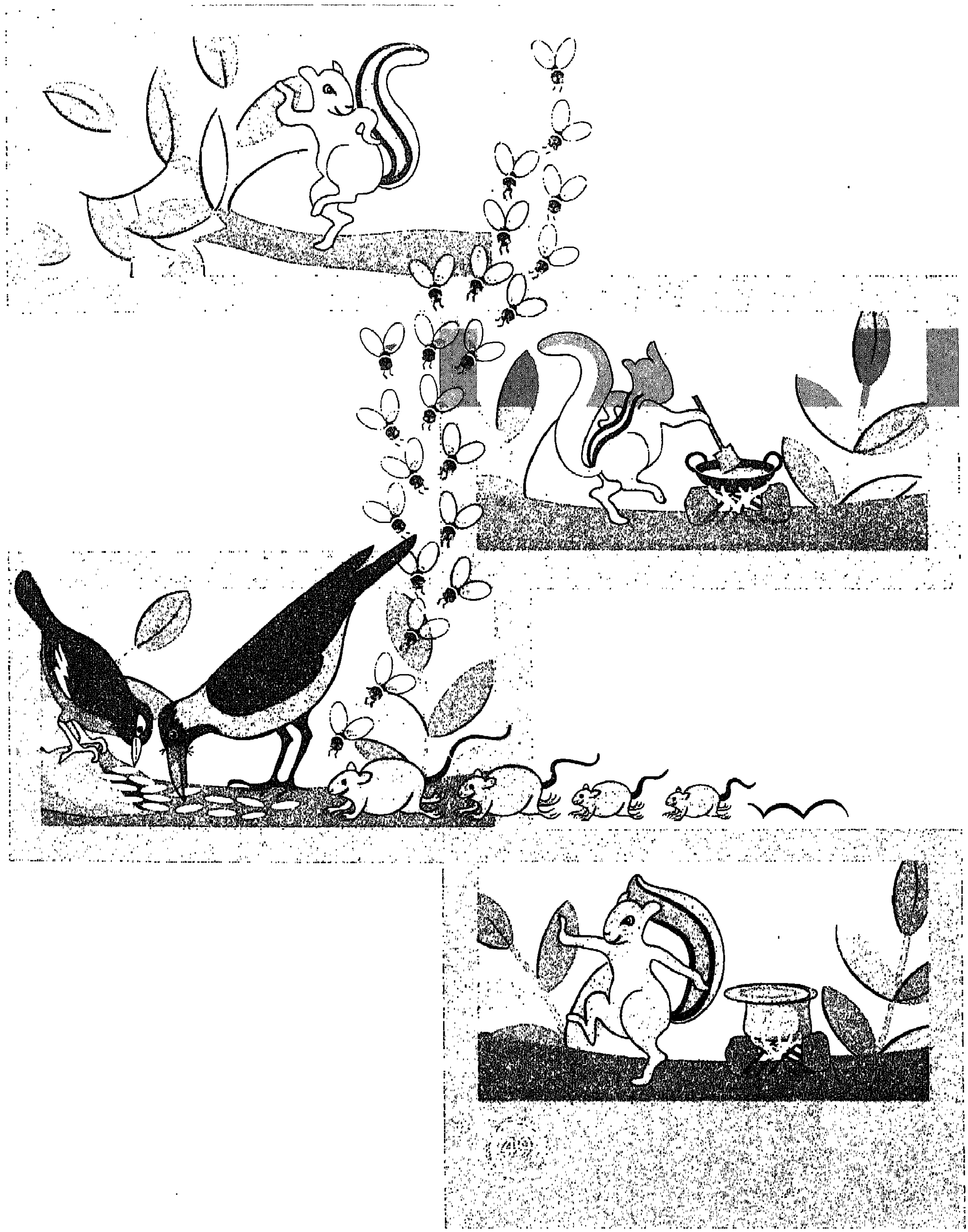
नीचे नाच की कुछ मुद्राएँ दी हैं। बताओ, ये मुद्राएँ क्या दिखा रही हैं?

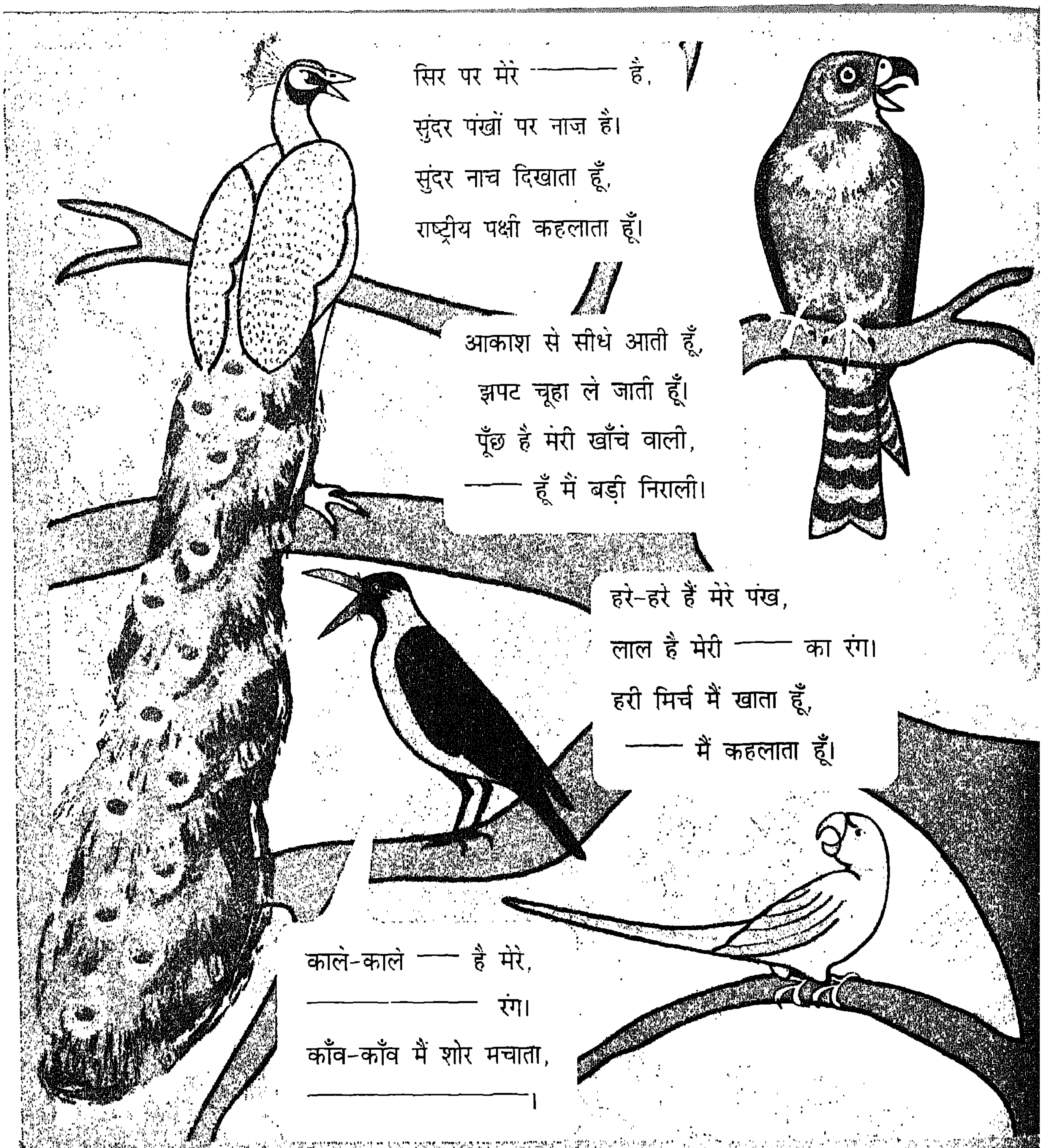


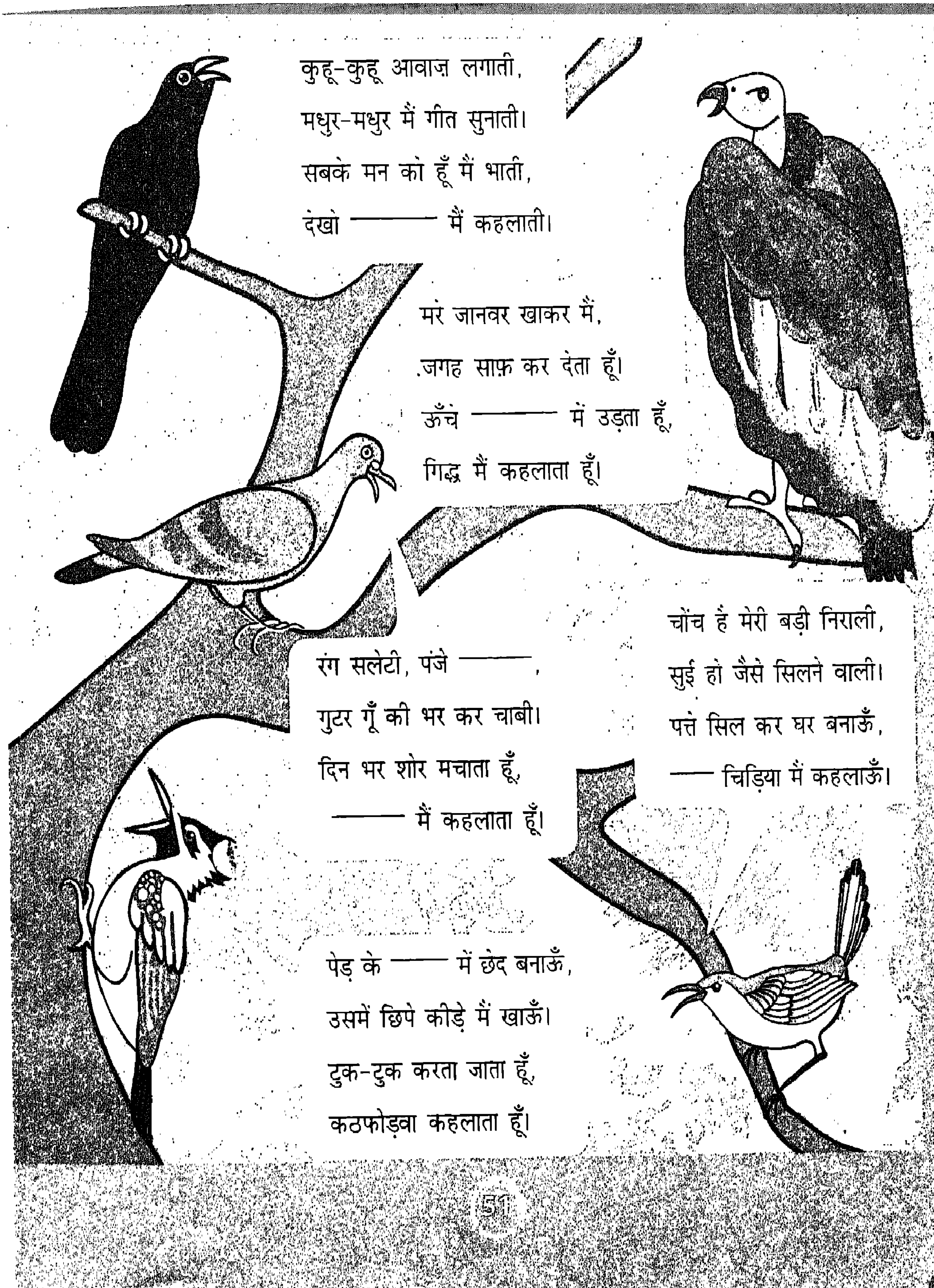


नाच की कुछ मुद्राएँ तुम भी सीखो और करके दिखाओ।

चित्र को देखकर, अपने मन से कहानी बनाओ और अपने साथियों को सुनाओ।




सिर पर मेरे ——— है,
सुंदर पंखों पर नाज़ है।
सुंदर नाच दिखाता हूँ,
राष्ट्रीय पक्षी कहलाता हूँ।
आकाश से सीधे आती हूँ,
झपट चूहा ले जाती हूँ।
पूँछ है मेरी खाँचे वाली,
—— हूँ मैं बड़ी निराली।
हरे-हरे हैं मेरे पंख,
लाल है मेरी —— का रंग।
हरी मिर्च मैं खाता हूँ,
—— मैं कहलाता हूँ।
काले-काले —— है मेरे,
———— रंग।
काँव-काँव मैं शोर मचाता,
————।



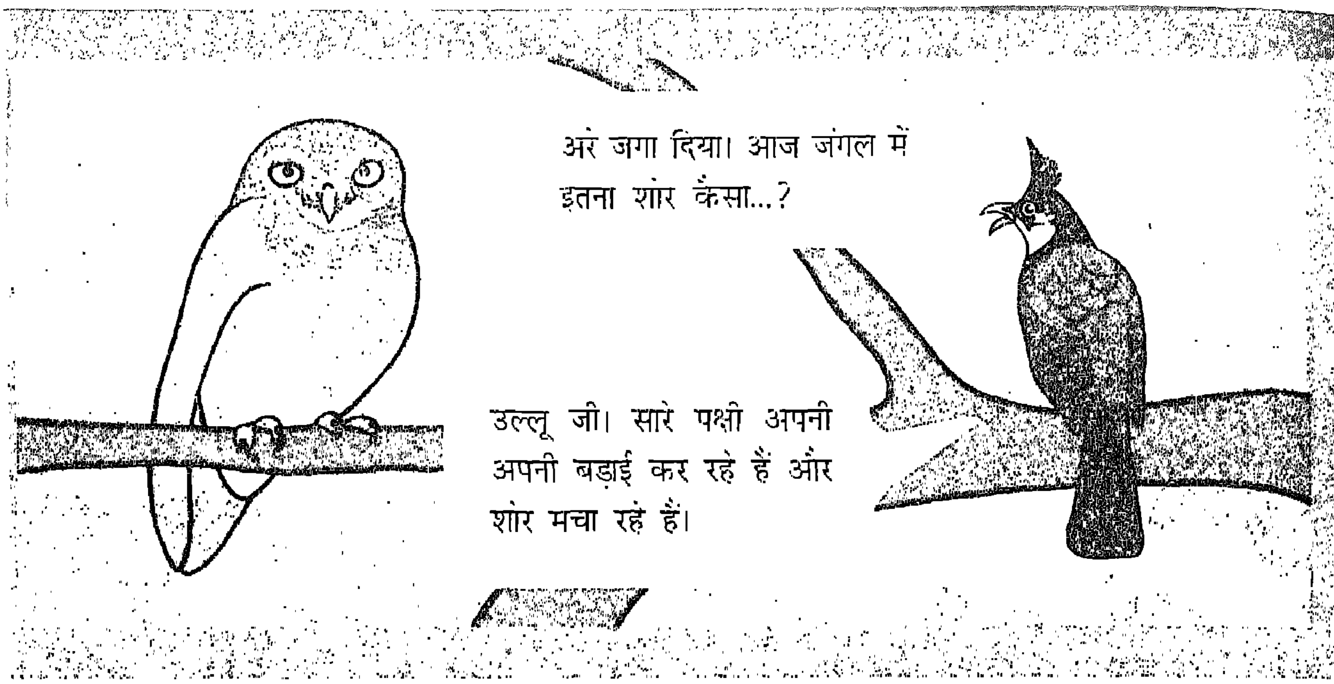
कुहू-कुहू आवाज़ लगाती,
मधुर-मधुर मैं गीत सुनाती।
सबके मन को हूँ मैं भाती,
देखो —————— मैं कहलाती।

मरे जानवर खाकर मैं,
जगह साफ़ कर देता हूँ।
ऊँचे —————— में उड़ता हूँ,
गिद्ध मैं कहलाता हूँ।

रंग सलेटी, पंजे —————— ,
गुटर गूँ की भर कर चाबी।
दिन भर शोर मचाता हूँ,
—————— मैं कहलाता हूँ।

चोंच है मेरी बड़ी निराली,
सुई हो जैसे सिलने वाली।
पत्ते सिल कर घर बनाऊँ,
—————— चिड़िया मैं कहलाऊँ।

पेड़ के —————— में छेद बनाऊँ,
उसमें छिपे कीड़े मैं खाऊँ।
टुक-टुक करता जाता हूँ,
कठफोड़वा कहलाता हूँ।



उल्लू बोला – अब, बंद क्यों नहीं करते यह शोरगुल? यह कैसा झगड़ा? हम सभी में कुछ-न-कुछ खास है। हमारे पंख, पैर, चोंच और बोली चाहे अलग-अलग हैं, पर हम सभी पक्षी हैं। सोचो, अगर हम सब एक जैसे दिखते और एक-सा खाते। बोली भी यदि एक-सी होती, तो कितनी नीरस होती हमारी यह दुनिया!

- पाठ में आए पक्षियों में से तुमने किन-किन को देखा है? उनके नाम लिखो।

__________ __________ __________ __________

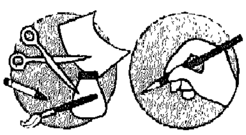
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अब बाहर जाकर देखो तुम्हें कितने पक्षी दिखते हैं। पेड़ पर ही नहीं, मैदान में, पानी में, पानी के आस-पास तथा झाड़ियों में भी देखना।

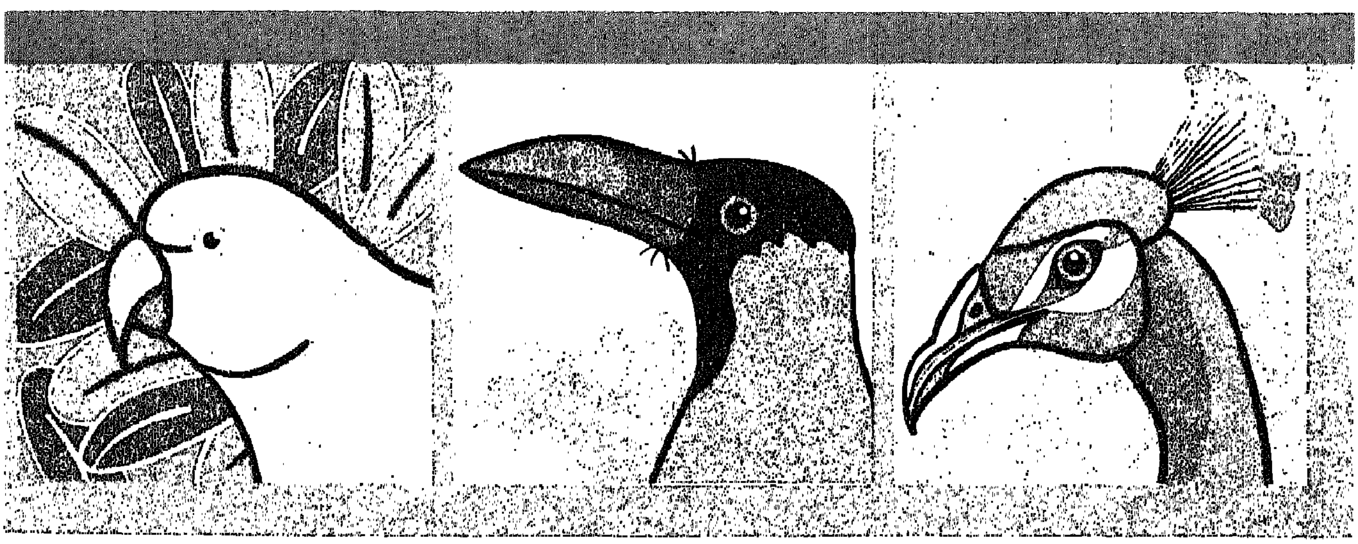
- पक्षियों के नाम भरो तथा सही जगह पर '✓' निशान लगाओ। यदि नाम नहीं जानते तो उनकी कोई पहचान लिखो।

बच्चे बाहर पक्षियों को देखेंगे तो कागज पर आसानी से पहचान कर पाएँगे। कविता को बढ़ाने के लिए बच्चों को पक्षियों के गुण पता होने से मदद मिलेगी, चाहे वे उनके नाम न भी जानते हों।

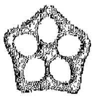
	जहाँ देखा है				
पक्षी का नाम	पानी में	पेड़ पर	ज़मीन पर	घर में	उड़ते हुए
________	________	________	________	________	________
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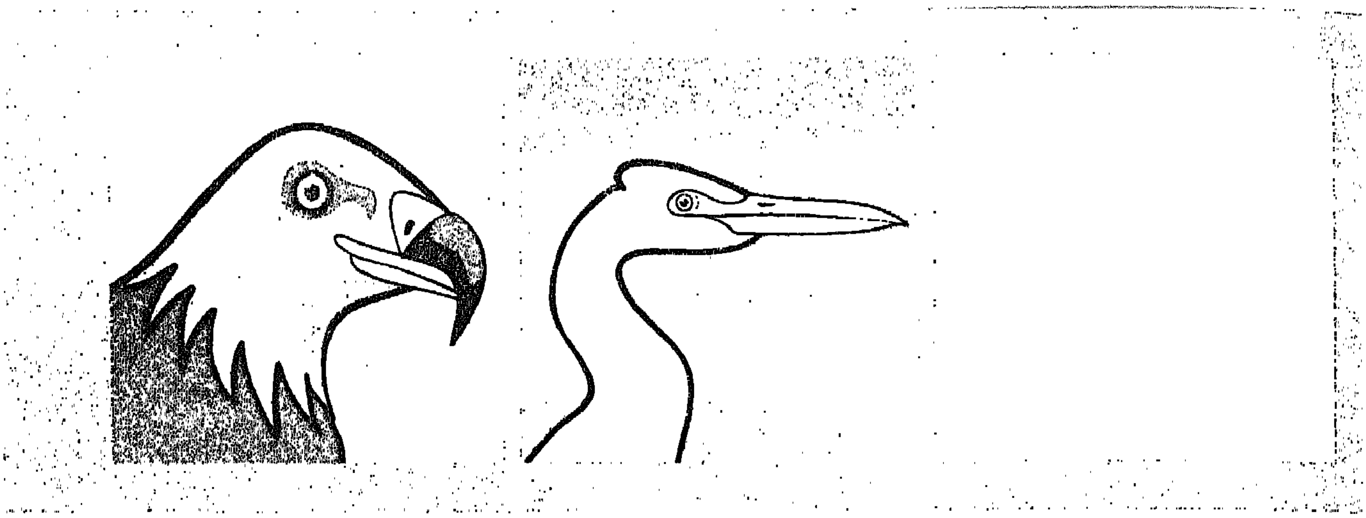
क्या तुमने कभी ध्यान दिया है कि अलग-अलग पक्षियों की चोंच भी अलग-अलग तरह की होती हैं? नीचे कुछ पक्षियों की चोंच के चित्र हैं। इनको ध्यान से देखो और पहचानो – ये किन पक्षियों की चोंच हैं। नीचे उनके नाम लिखो। खाली खाने में किसी अन्य पक्षी की चोंच बनाओ, उसमें भी रंग भरो। उसका नाम भी लिखो।



________ ________ ________

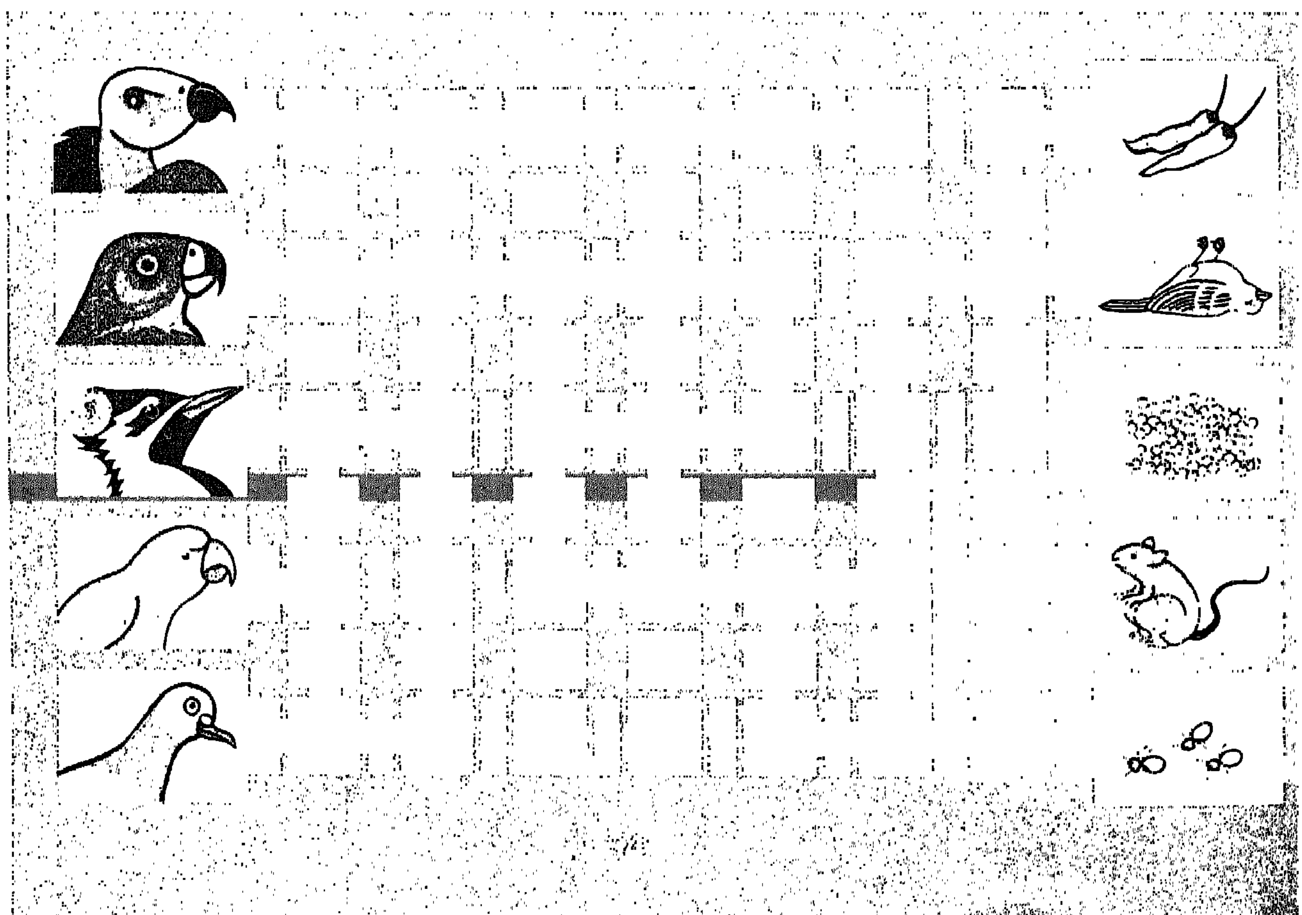


बच्चों की पक्षियों में रुचि बढ़ाने के लिए, बच्चे चुपचाप बैठकर पक्षियों को देखें तथा अपने अवलोकनों को नोट करना भी सीखें।



देखा, पक्षियों की चोंच कितनी अलग-अलग तरह की होती है। उतना ही अलग-अलग तरह का होता है उनका भोजन! पक्षी तरह-तरह की चीज़ें खाते हैं। कोई फल खाता है, तो कोई बीज। कोई कीड़े-मकौड़े खाता है, तो कोई मछली।

चित्र में दिए गए पक्षियों को उनके भोजन के साथ जोड़ो।



क्या तुमने कभी ध्यान दिया है कि पक्षियों के उड़ने, चलने और गर्दन घुमाने के तरीके अलग-अलग हैं। मैना झटके से अपनी गर्दन आगे-पीछे करती है। उल्लू तो अपनी गर्दन पीछे तक घुमा सकता है। क्या तुम भी ऐसा कर सकते हो?

कई पक्षी ऐसे हैं, जो हमारी बोली की नकल कर सकते हैं। क्या तुम ऐसे किसी पक्षी का नाम जानते हो? उसका चित्र अपनी कॉपी में बनाओ और उसका नाम भी लिखो।

बाहर खुले में जाओ। पक्षियों को देखो कि वे कैसे चलते हैं, उनके पंख कैसे हैं और गर्दन कैसे हिलाते हैं। पक्षियों की आवाज़ें भी सुनो। किन्ही तीन पक्षियों की आवाज़ों की नकल करो। उनके गर्दन को हिलाने की भी नकल करो। अपने साथियों से कहो कि वे पहचानें तुमने किस पक्षी की नकल की है।

पक्षियों के पंख अलग-अलग रंगों व डिज़ाइन के होते हैं। उनके पंख उड़ने में मदद करते हैं। इतना ही नहीं, पंख उनके शरीर को गर्म भी रखते हैं। समय-समय पर पक्षियों के पुराने पंख झड़ जाते हैं और नए पंख आ जाते हैं। तुमने भी कई बार पक्षियों के गिरे हुए पंखों को देखा होगा।

पक्षियों के गिरे हुए पंखों को इकट्ठा करो और उनके रंग, आकार और आकृति पर चर्चा करो। एक पक्षी का चित्र अपनी कॉपी में बनाओ और उस पर पंख चिपकाओ। उसका नाम भी लिखो।

❖ पक्षियों के अलावा और कौन-कौन से जानवर उड़ सकते हैं?

______________ ______________ ______________

______________ ______________ ______________

अगर तुम भी पक्षियों की तरह उड़ सकते, तो तुम कहाँ-कहाँ जाते? क्या-क्या करते?

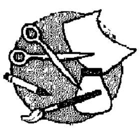
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यदि पक्षी उड़ न सकें, बस अपने पैरों पर ही चलें तो क्या होगा?

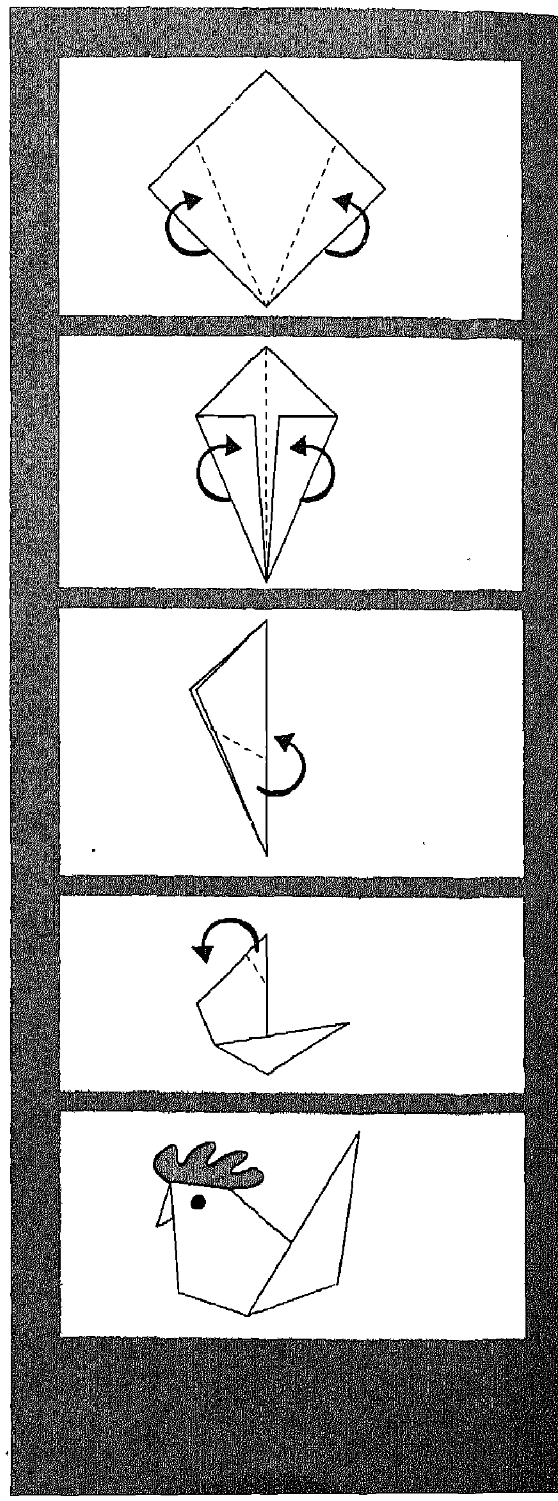


आओ बनाएँ मुर्गा

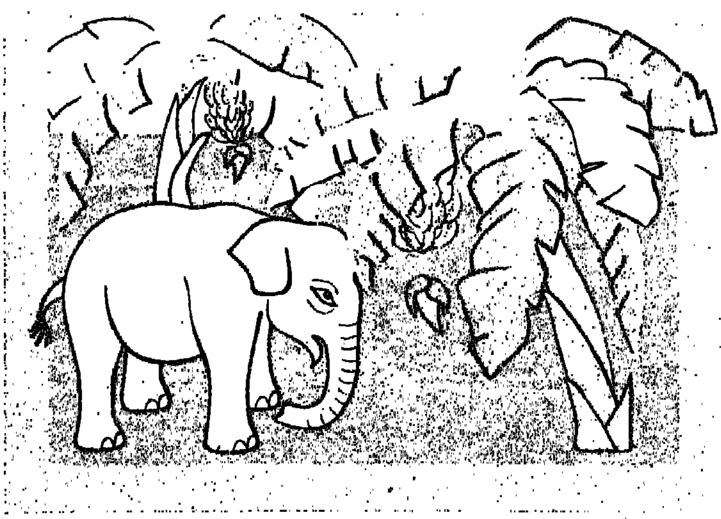
एक चौकोर कागज़ लो। इसे चित्र के अनुसार बिंदुओं की जगह से मोड़ो।

1. चित्र में दिखाए गए बिंदुओं से कागज़ को आधा मोड़ो।
2. अब कागज़ को बिंदु-रेखा से तीर के निशान की ओर मोड़ो।
3. चित्र में दिखाए गए तरीके से कागज़ को मोड़ कर मुर्गे की चोंच बनाओ।
4. अब एक लाल रंग के कागज़ को मुर्गे की कलगी के आकार में काटकर उसके सिर के ऊपर चिपका दो।
5. एक छोटे से काले कागज़ को गोल काटकर मुर्गे की आँख की जगह चिपका दो।

बस, हो गया तुम्हारा मुर्गा तैयार!



बादल आए, बारिश लाए 9



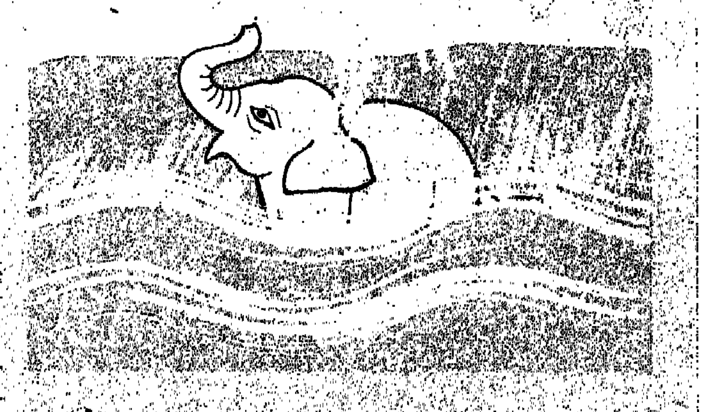
अप्पू हाथी को केले बहुत पसंद हैं। वह रोज़ केले के पेड़ों से केले तोड़कर खाता है।

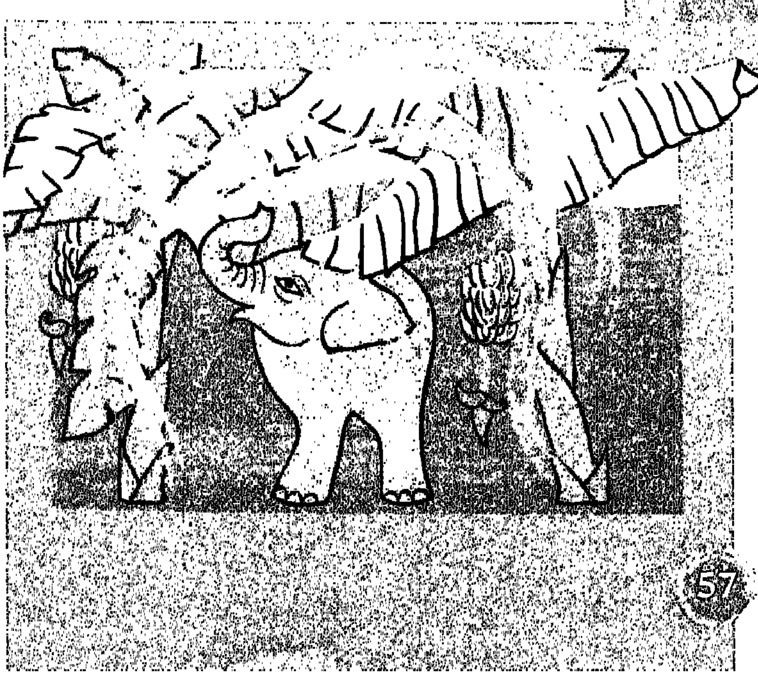
एक दिन उसने देखा कि केले के पेड़ मुरझा रहे हैं। बहुत दिनों से बारिश जो नहीं हुई थी।

अप्पू बोला – मैं अभी अपनी सूँड़ में पानी भरकर लाता हूँ।

वह नदी की ओर चल पड़ा।

नदी से अप्पू ने जी भरकर पानी पिया। सूँड़ में पानी भर-भर कर वह खूब नहाया।





फिर सूँड़ में पानी भरा और जाकर केले के पेड़ों को भी नहला दिया।

पानी मिलते ही केले के पेड़ खिल उठे। अप्पू बोला – अब मैं रोज़ तुम्हारे लिए पानी लाऊँगा, तुम मुझे मीठे-मीठे केले जो देते हो।

- अप्पू को कैसे पता लगा कि केले के पेड़ों को पानी चाहिए?

- तुम्हारे घर के आस-पास के पेड़-पौधों को पानी कहाँ से मिलता है?

- अप्पू हाथी ने नदी से जी भर कर पानी पिया। तुमने जानवरों को कहाँ-कहाँ पानी पीते देखा है?

- क्या तुमने कभी किसी जानवर को पानी पिलाया है? अगर हाँ, तो किसको?

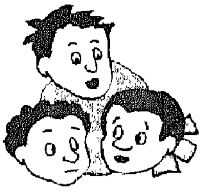
- जिन जानवरों को कोई पानी नहीं पिलाता, वे पानी कहाँ से पीते हैं?

कहानी में तुमने पढ़ा कि केले के पेड़ को अप्पू हाथी ने पानी दिया। असल में तो हाथी पेड़ों को ऐसे पानी नहीं देते। तो फिर उन पेड़-पौधों को पानी कहाँ से मिलता है, जिन्हें कोई पानी नहीं देता?

पेड़-पौधों को ज़्यादातर पानी बारिश से मिलता है। बारिश आते ही पेड़-पौधे खिल उठते हैं। आओ, बारिश के बारे में एक कविता पढ़ें।

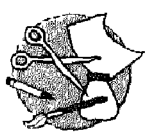
गोरे-गोरे, काले-काले,
बादल आए जादू वाले।
कुत्ता-गइया
हाथी-घोड़ा
और कभी
हंसों का जोड़ा
या फिर बनकर अरना भैंसे
दौड़ेंगे हो कर मतवाले।
पल में आते
पल में जाते
महीनों कभी
नज़र ना आते
और कभी जम जाते ऐसे
हफ़्तों तक ना टलते टाले।
कभी गरजते
कभी बरसते
इंद्रधनुष के
रंग परसते
और कभी ओले बरसा के
तोड़ गए हैं शीशे-प्याले।

— हरीश निगम
[illegible]



कवि को बादलों में बहुत कुछ दिखा। क्या तुम्हें भी बादलों में कभी कुछ दिखा है? क्या?

- बादल क्या-क्या करते हैं?
- बारिश आने पर तुम्हें कैसा लगता है?
- बारिश आने पर बादलों के अलावा और क्या-क्या दिखाई देता है?
- क्या तुमने कभी इंद्रधनुष देखा है? इंद्रधनुष कब दिखाई देता है?
- बारिश होने पर क्या-क्या होता है?



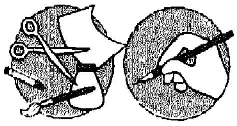
बारिश होने पर नाव बनाने और उसे पानी में चलाने में मज़ा आता है ना? कागज़ की नाव बनाओ और उसे पानी में तैराओ।

क्या तुमने बारिश में कोई परेशानी झेली है या देखी है? अपने अनुभवों के आधार पर चित्र बनाओ।

वाह रे बारिश तेरी शान, कोई है खुश, कोई परेशान।

बच्चों के बारिश से जुड़े अनुभवों को सुनने से, बारिश से होने वाले प्रभावों – अच्छे या बुरे – दोनों पर गहराई से चर्चा हो सकती है।



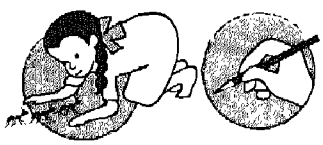


चित्र में जिन जगहों में बिंदु (•) लगे हैं, उनमें रंग भरो। क्या-क्या उभर कर आया?

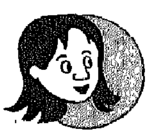
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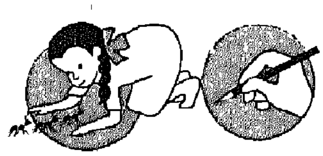
तुमने चित्र में खाना पकाने के कई बर्तन ढूँढ़ लिए होंगे। क्या तुम्हारे घर में इनके अलावा कुछ अन्य बर्तनों का भी इस्तेमाल होता है? कौन-से?



बर्तन किन-किन चीज़ों के बने होते हैं?



अपने बुज़ुर्गों से पता करो कि पहले किस तरह के बर्तन ज़्यादा काम में आते थे। वे किस चीज़ के बने होते थे?



हम खाने की हर चीज़ को तो पकाकर नहीं खाते। पता करो कि हम किन चीज़ों को कच्चा खाते हैं और किन को पकाकर। किन चीज़ों को, कच्चा या पकाकर, दोनों तरह से खाया जाता है। दी गई तालिका में भरो।

कच्ची खाई जाने वाली चीज़ें	पकाकर खाई जाने वाली चीज़ें	कच्ची और पकाकर खाई जाने वाली चीज़ें

तुमने कभी रोटी बनते देखी है? इसके लिए कितने काम करने पड़ते हैं – आटे को बर्तन में निकालना, उसे गूँधना, आटे के छोटे-छोटे गोले बनाना, गोले को बेलना और फिर सेकना। इतने सारे काम करने के बाद रोटी थाली में आती है।

अब तुम रसोई में जाकर किसी एक चीज़ को पकते देखो। उसे पकाने के लिए क्या-क्या किया गया? क्रम से लिखो। चीज़ का नाम लिखना मत भूलना। अपने कुछ साथियों की कॉपी भी देखो। समूह में इस पर चर्चा करो।

चीज़ का नाम ____________

1. ____________ 2. ____________ 3. ____________

4. ____________ 5. ____________ 6. ____________

तुमने देखा, खाने की चीजें तरह-तरह से पकाई गईं हैं। कोई सेककर तो कोई तलकर। किसी को भूनते हैं, तो किसी को भाप में पकाते हैं।

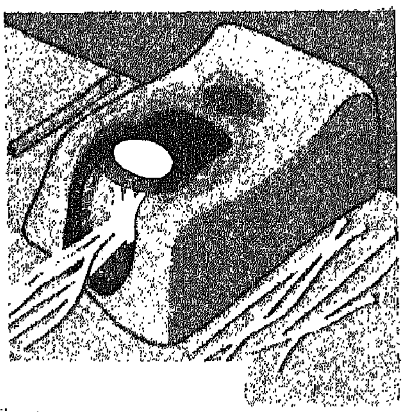
दिए गए पकाने के तरीके के सामने दो-दो चीज़ों के नाम लिखो, जो उस तरीके से पकाई जाती हैं। खाली जगह में कुछ अन्य तरीके भी जोड़ो और उनके उदाहरण भी लिखो।

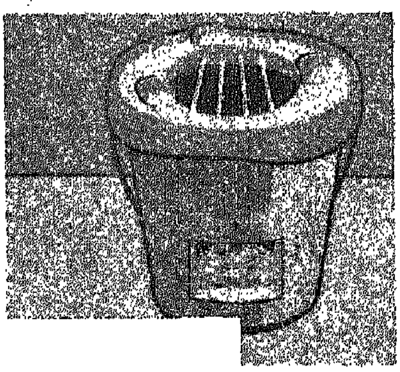
पकाने का तरीका	चीज़ों के नाम	
भूनकर	____________	____________
उबालकर	____________	____________
तलकर	____________	____________
सेककर	____________	____________
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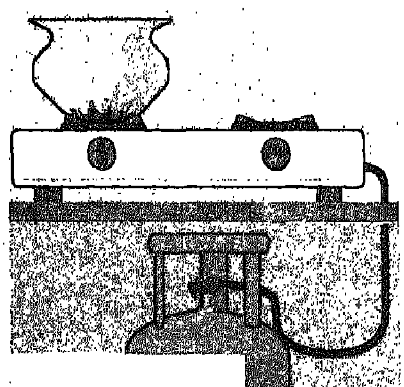
घर के लोगों से बात करके बच्चे अपनी जानकारी बढ़ाएँ, जिससे यह स्पष्ट हो सके कि शिक्षिका के अलावा और व्यक्ति भी जानकारी के स्रोत हो सकते हैं।

❖ तुम्हारे घर में भोजन किस पर पकाया जाता है? उसका चित्र कॉपी में बनाओ और उसका नाम लिखो।

❖ नीचे दिए गए चित्रों को पहचान कर उनके नाम लिखो। इनको जलाने के लिए क्या-क्या इस्तेमाल होता है – उससे उसका मिलान करो। मिलान एक से ज़्यादा चीज़ों से हो सकता है।







मिट्टी का तेल

कोयला

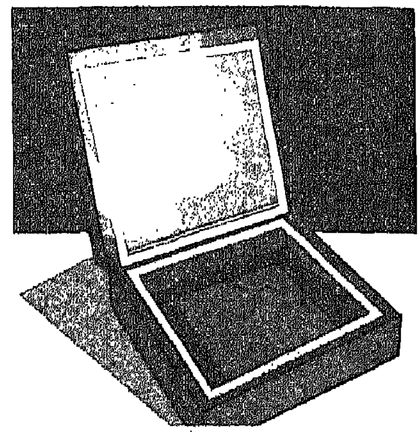
बिजली

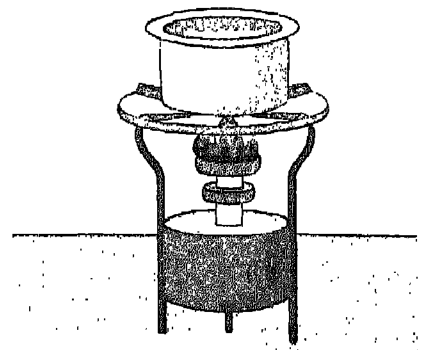
गैस

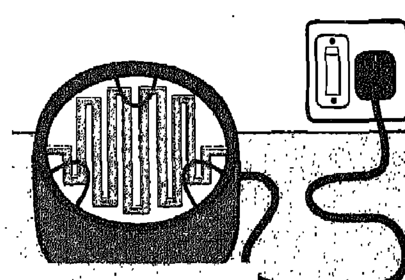
धूप

लकड़ी

उपले







खाना पकाने के अलग-अलग तरीकों पर बच्चों के अपने अनुभव रुचिकर हो सकते हैं। घरों में प्रयोग किए जाने वाले ईंधन से पर्यावरण पर पड़ने वाले प्रभाव पर चर्चा भी हो सकती है।

साबुत मूंग को पानी में रात भर भिगो दो। सुबह उन्हें गीले कपड़े में लपेटो और ढक कर किसी बर्तन में रखो। एक-दो दिन बाद उन्हें खोलकर देखो। क्या उनमें कुछ अंतर दिखता है?

इनमें कुछ कटा हुआ प्याज़, टमाटर, नमक और नींबू का रस मिलाओ। कक्षा में मिल बाँट कर खाओ।

ऐसी और कौन-सी चीज़ें हैं, जिन्हें तुम बिना पकाए तैयार कर सकते हो? नीचे उनके नाम और तरीके भी लिखो।

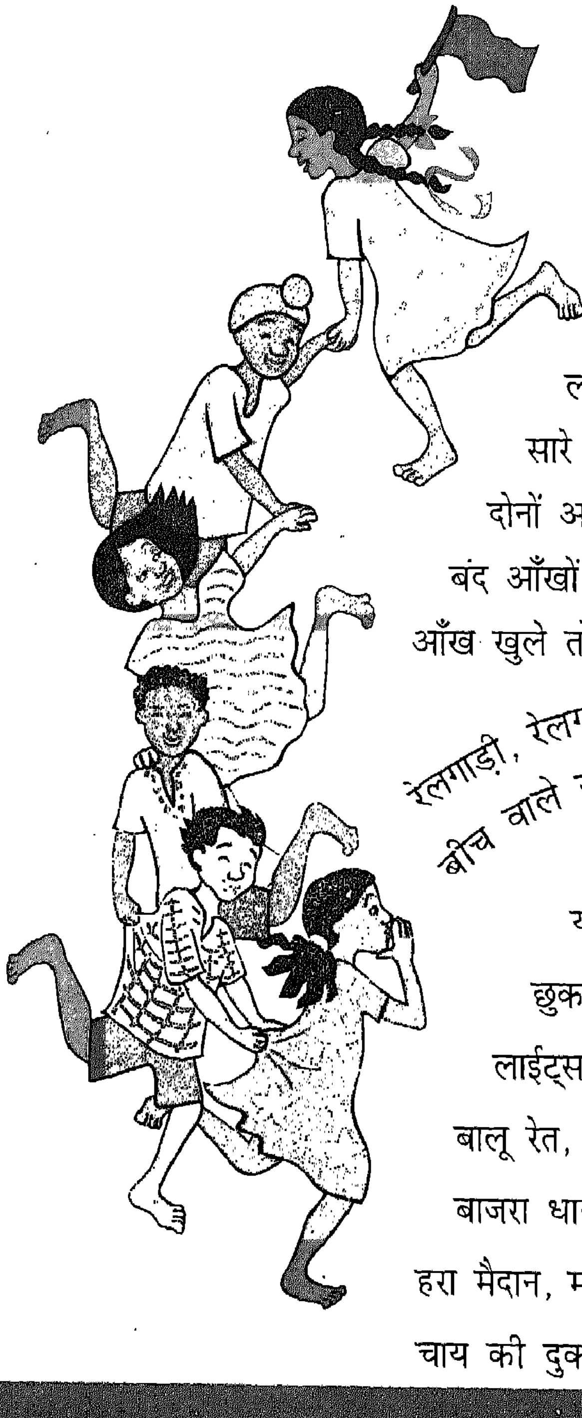
1. नींबू की शिकंजी [पानी में शक्कर घोलना] → [नींबू का रस डालना] → [छानना] → [शिकंजी तैयार है।]

2. ________ [ ] → [ ] → [ ] → [ ]

3. ________ [ ] → [ ] → [ ] → [ ]

बच्चों को मिलजुल कर खाने की चीज़ें बनाने में मज़ा आता है। वे अपने परिवेश के अनुसार कुछ चीज़ें बना सकते हैं।

रेलगाड़ी



आओ बच्चों खेल दिखाएँ,
छुक-छुक करती रेल चलाएँ।
सीटी देकर सीट पर बैठो,
एक-दूजे की पीठ पर बैठो।
आगे-पीछे, पीछे-आगे,
लाइन से लेकिन कोई ना भागे।
सारे सीधी लाइन में चलना,
दोनों आँखें मीचे रखना।
बंद आँखों से देखा जाए,
आँख खुले तो कुछ न पाए।
रेलगाड़ी, रेलगाड़ी, छुक-छुक छुक-छुक, छुक-छुक-छुक-छुक-छुक।
बीच वाले स्टेशन बोले, रुक-रुक-रुक-रुक, रुक-रुक-रुक-रुक-रुक।
तड़क-भड़क, लोहे की सड़क,
यहाँ से वहाँ, वहाँ से यहाँ।
छुक-छुक, छुक-छुक,
लाईट्स आती, पार कर जाती।
बालू रेत, आलू का खेत,
बाजरा धान, बुड्ढा किसान।
हरा मैदान, मंदिर मकान,
चाय की दुकान...

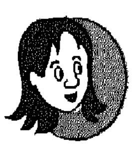
रेलगाड़ी, रेलगाड़ी, छुक-छुक छुक-छुक, छुक-छुक-छुक-छुक।
बीच वाले स्टेशन बोले, रुक-रुक-रुक-रुक, रुक-रुक-रुक-रुक।

पुल पगडंडी, टीले पे झंडी,
पानी का कुंड, पंछी का झुंड।
झोंपड़ी-झाड़ी, खेती-बाड़ी,
बादल धुआँ, मोठ कुआँ।
कुएँ के पीछे, बाग बगीचे,
धोबी का घाट, मंगल की हाट।
गाँव में मेला, भीड़ झमेला,
टूटी दीवार, टट्टू सवार...

रेलगाड़ी, रेलगाड़ी, छुक-छुक छुक-छुक, छुक-छुक-छुक-छुक।
बीच वाले स्टेशन बोले, रुक-रुक-रुक-रुक, रुक-रुक-रुक-रुक।

– हरेंद्रनाथ चट्टोपाध्याय की कविता के कुछ अंश

तो कैसी लगी यह कविता!



- क्या तुम रेलगाड़ी में बैठे हो? कब-कब?
- क्या रेलगाड़ी कहीं भी चल सकती है? क्यों?
- इस कविता में 'लोहे की सड़क' किसको कहा गया है?



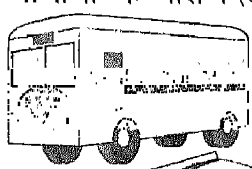
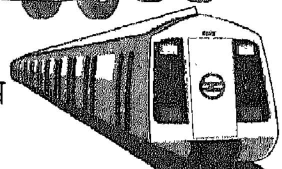
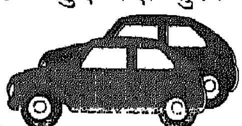
- कविता में रेलगाड़ी कहाँ-कहाँ से होकर गई है? सूची बनाओ।

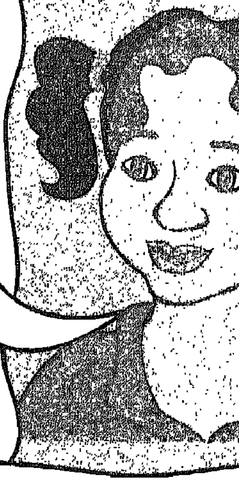
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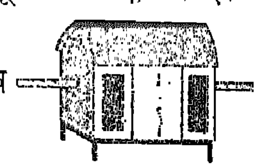
- तुम किस-किस वाहन पर बैठे हो? उनके नाम अपनी कॉपी में लिखो।

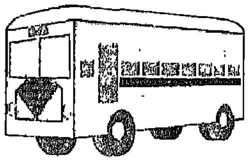
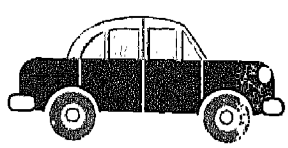
आओ, तुम्हें कुछ बच्चों से मिलवाएँ और पता करें कि उन्होंने अपनी छुट्टियाँ कैसे बिताईं।

मैं चाचाजी के पास दिल्ली गई थी। रेलवे स्टेशन से उनके घर पहले तो  से जाते थे, पर इस बार तो मज़ा आ गया। हम  में बैठ कर ज़मीन के नीचे सुरंग से होते हुए गए। सुरंग में जाते हुए अहसास ही नहीं हुआ कि ऊपर  सरपट भाग रहीं होंगी।



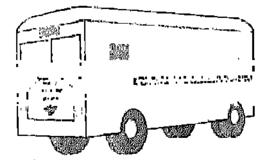


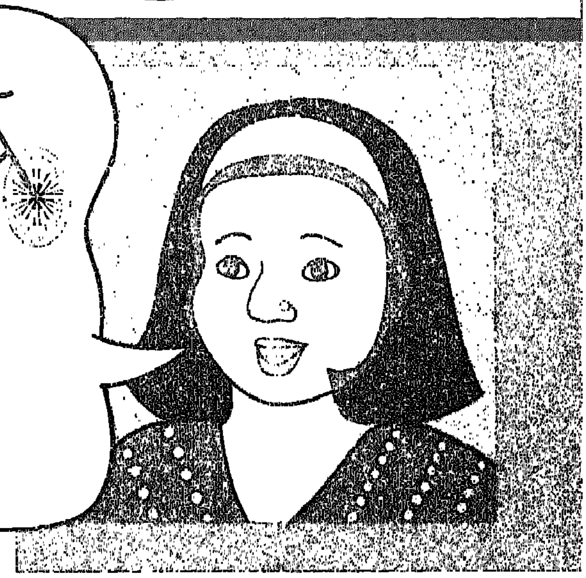
मेरी तो बुआ की शादी थी। इतने सारे रिश्तेदार मिले। खूब खाया, पिया और खेले। बड़े भैया भी अमेरिका से आए थे  में बैठकर। सोचो तो अजीब लगता है – इतनी दूर से आए, पर एक ही दिन में पहुँच गए। दुल्हन बनी बुआ को जब  में ले जा रहे थे, वह बहुत सुंदर लग रहीं थी।

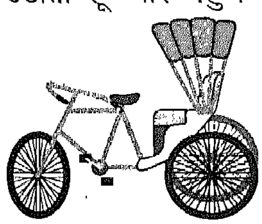
मैं अपनी नानी के घर केरल गई थी। वे जहाँ रहती हैं, आस-पास पानी ही पानी है। उनके घर जाने के लिए घूम कर जाते तो स्टेशन से  या  ले सकते थे। पर हम सीधे  में गए। कुछ अजीब लगा पर अच्छा भी!



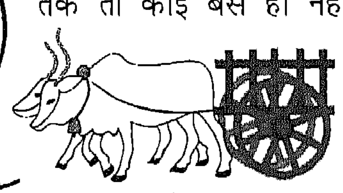


हम लोग छुट्टियों में शिमला घूमने गए। ऊँचे-ऊँचे पहाड़ों पर जब टेढ़े-मेढ़े रास्तों से होकर  चलती है, तब नीचे देखकर बहुत डर लगता है। शिमला में हमें बहुत पैदल चलना पड़ा। मेरी दादी तो जल्दी ही थक जाती थी। हम उन्हें  पर बिठा देते थे। मैं तो मज़े से पैदल चलता था। थकता भी नहीं था।



मेरी खाला तो मेरे घर के पास ही रहती है। जब भी खाला के पास जाने का मन करता है, मैं झट अपनी  उठाती हूँ और पहुँच जाती हूँ उनके पास। माँ और छोटू तो  पर बैठकर नानी के घर जाते हैं।



इन छुट्टियों में मैं अपने मामाजी के गाँव गया था। उनके गाँव तक तो कोई बस ही नहीं जाती। हम लोग रेलवे स्टेशन से  में बैठकर लहलहाते खेतों के बीच में से होकर गाँव तक गए। मुझे तो बैलों के गले में बंधी घंटियों की आवाज़ सुनना बहुत अच्छा लगा।

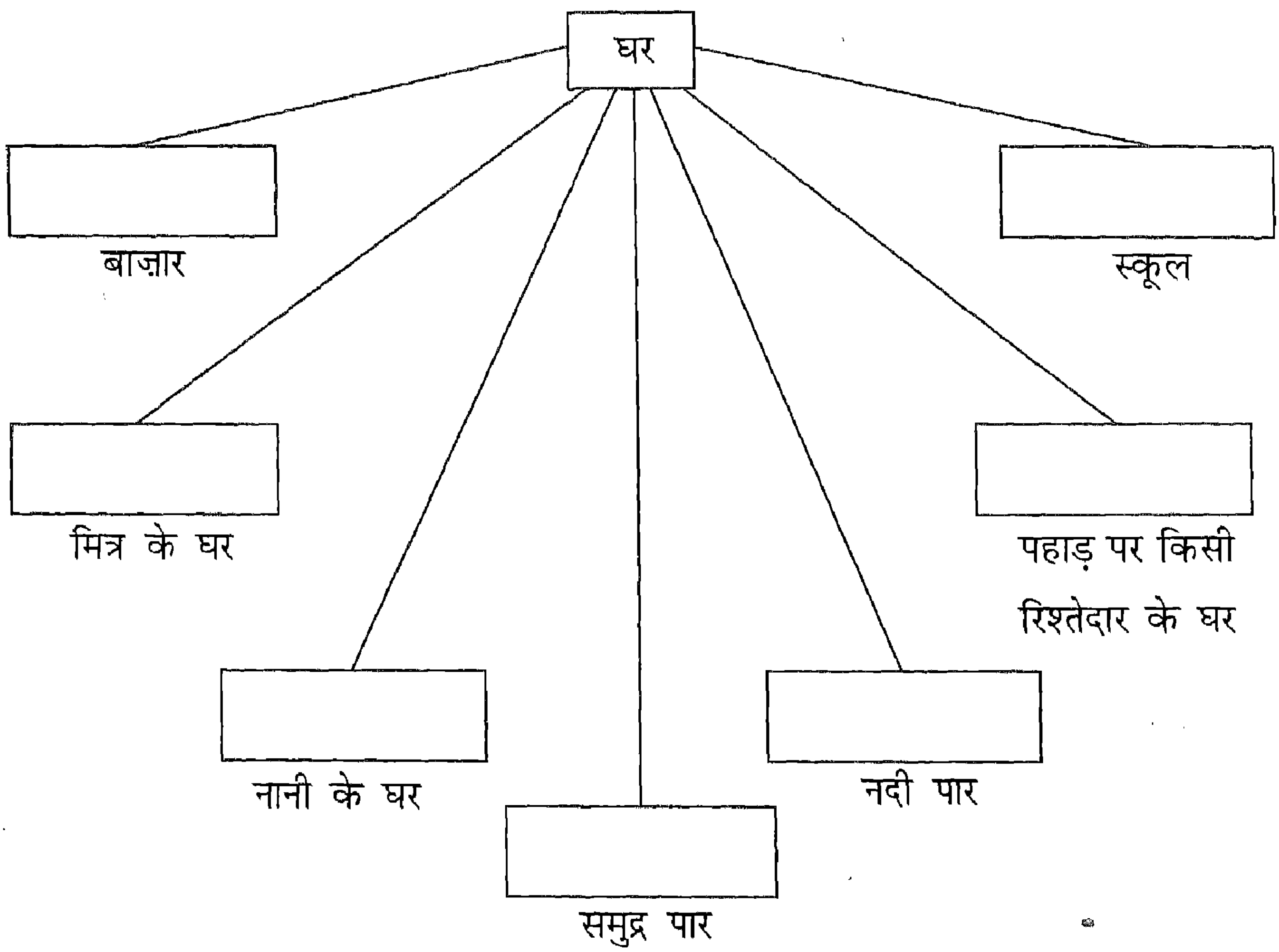
❋ बच्चों ने किन-किन वाहनों के नाम लिए?

_______________ _______________ _______________

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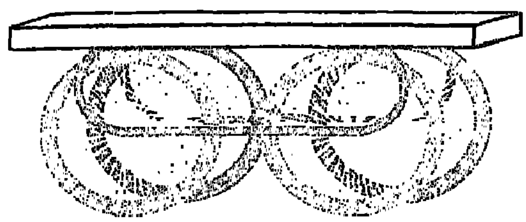
❋ नीचे लिखी जगहों पर अपने घर से कैसे जाना चाहोगे? वाहन का नाम डिब्बे में लिखो।

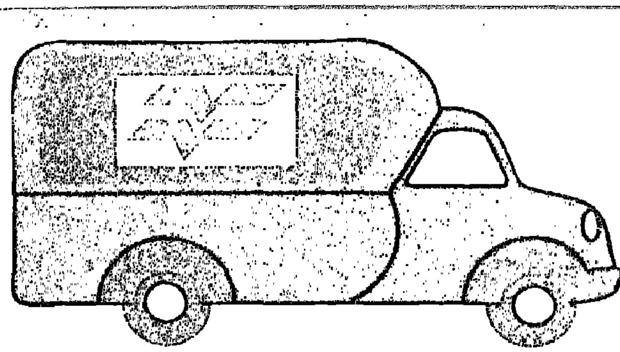


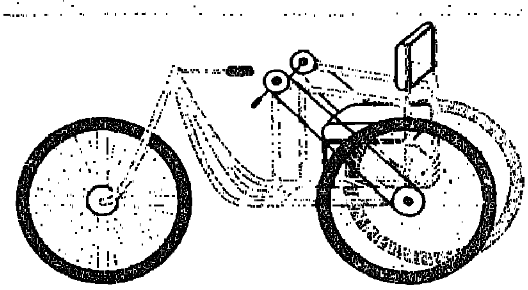
बच्चों ने कई वाहनों को या तो वास्तव में या किताबों, फिल्मों आदि में देखा होगा। यह सभी अनुभव बच्चों से चर्चा करने में मदद कर सकते हैं।

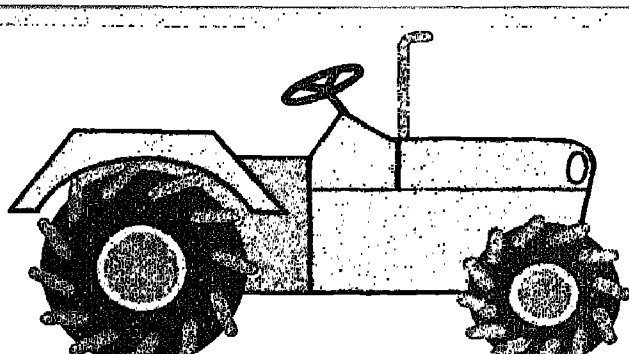
कुछ वाहनों के चित्र बने हैं। चित्र के सामने उनके नाम तथा वे किस काम आते हैं लिखो। खाली जगह में अन्य वाहनों के चित्र बनाओ। उनके नाम और काम भी लिखो। क्या ये सभी वाहन केवल हमारे आने-जाने के काम आते हैं?

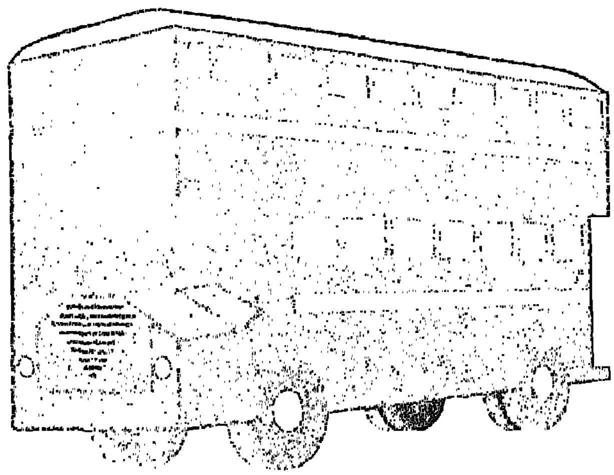
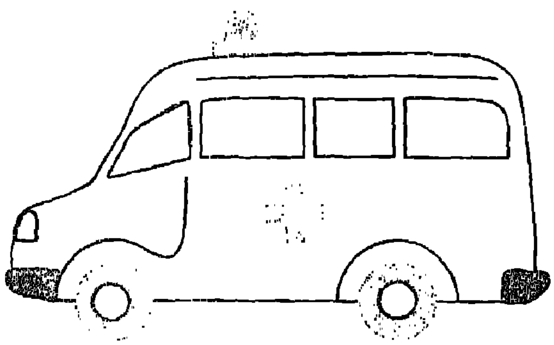
वाहन	काम



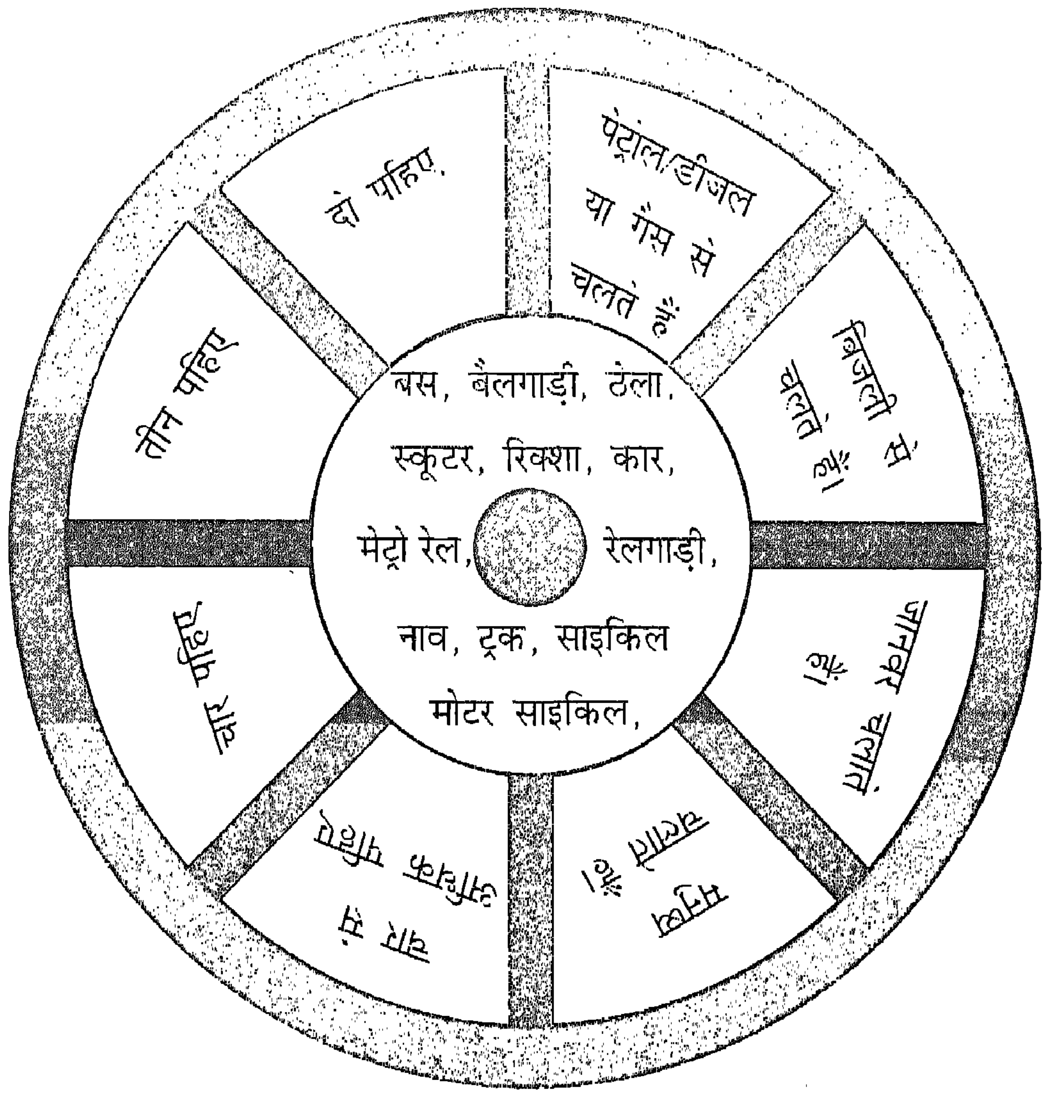


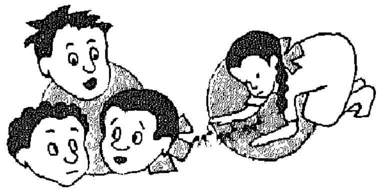




वाहन	काम
	
	

नीचे दिए चित्र में कुछ वाहनों के नाम लिखे हैं। तुम्हें हर वाहन को एक तरफ़ उसके पहिए की संख्या से जोड़ना है। दूसरी तरफ़ उसी वाहन को वह जिससे चलता है, उससे जोड़ना है।





बड़ों से पूछ कर पता लगाओ – आज से पचास साल पहले लोग कैसे आते-जाते थे? क्या तब भी यही सब साधन थे?



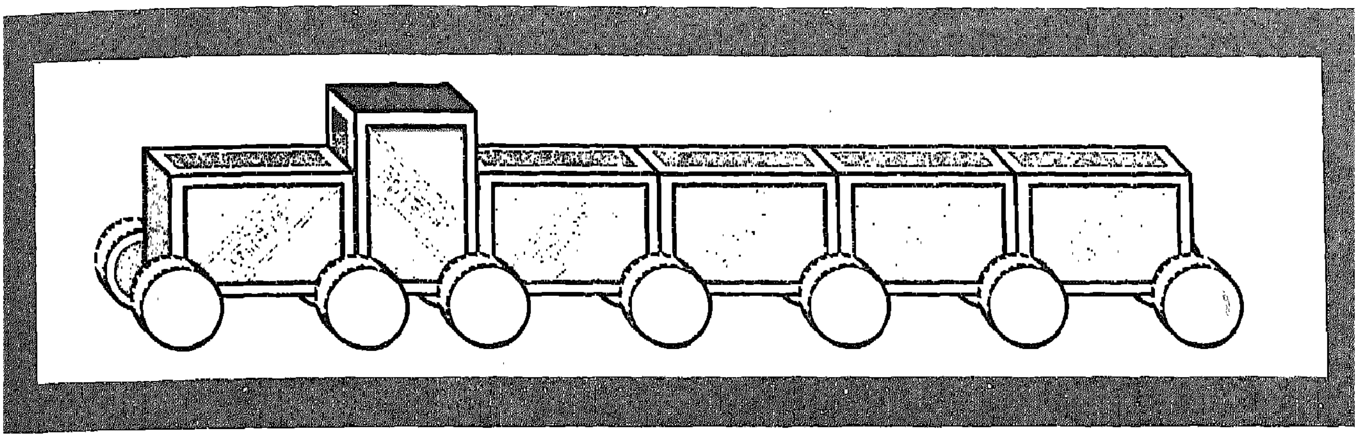
क्या तुम अनुमान लगा सकते हो कि बीस साल बाद लोग आने-जाने के लिए किस-किस तरह के वाहन का प्रयोग करेंगे? अपने घर के लोगों और दोस्तों से पूछ कर दी गई तालिका भरो।

किससे पूछा	क्या कहा
स्वयं से (मैं)	
दोस्त	
चाचा	
शिक्षिका	

बड़ों से प्राप्त जानकारी पर आधारित चर्चा बच्चों को वाहनों में आए बदलावों को समझने में सहायता करेगी। किताब में बुर्जुर्गों – नाना-नानी, दादा-दादी से इसीलिए बार-बार पूछने को कहा गया है ताकि उस समय के और अभी के बीच के अंतर को बच्चे पहचान सकें।

तुम्हारी अपनी रेलगाड़ी

दिए गए चित्र की मदद लेकर माचिस से रेलगाड़ी बनाओ।



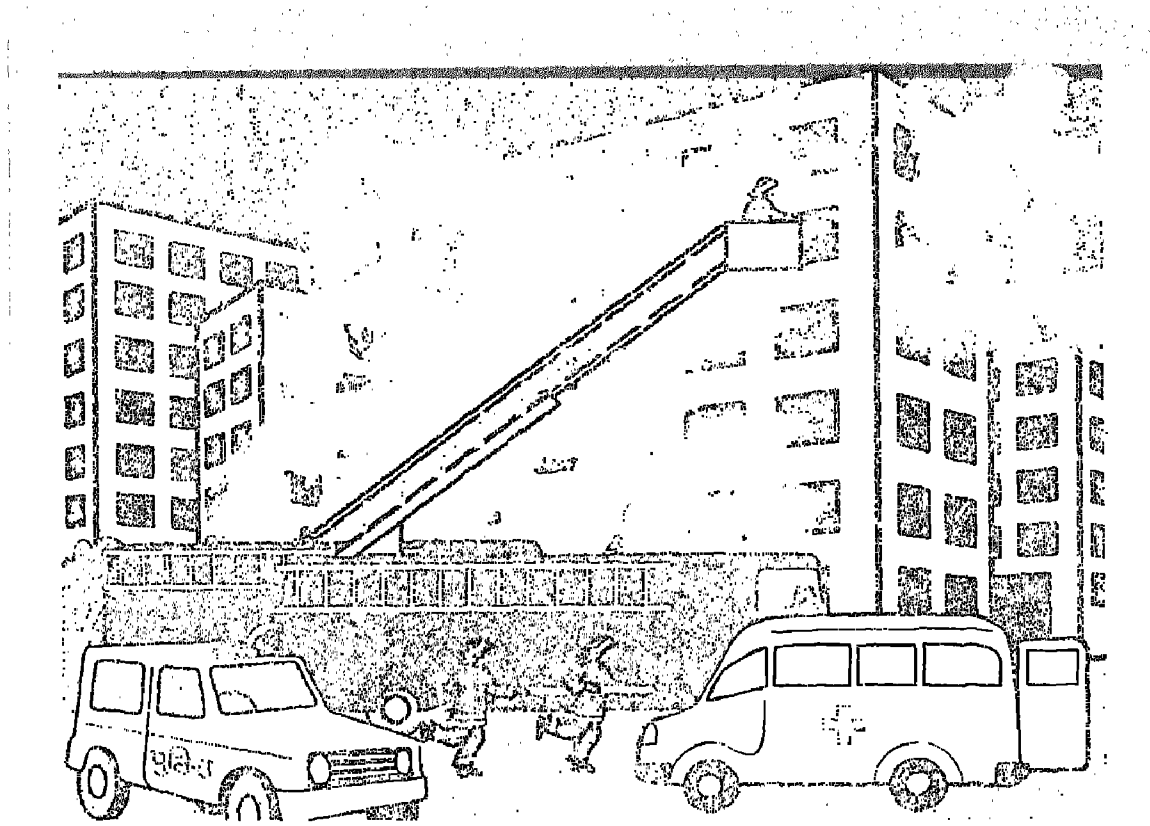
अगर कोई छुक-छुक की आवाज़ करे तो तुम झटपट पहचान ही जाते हो कि वे रेलगाड़ी के लिए कह रहें हैं।

क्या तुम इन आवाज़ों से वाहन को पहचान सकते हो? लिखो।

छुक-छुक	-	रेलगाड़ी	पीं-पीं	-	____________
पौं-पौं	-	____________	टप-टप	-	____________
घर्र-घर्र	-	____________	ट्रिन-ट्रिन	-	____________

- यह तो थी एक-एक वाहन की आवाज़। जब सड़क पर एक साथ कई वाहन आवाज़ें करते हुए चलते हैं, तो कैसा लगता है? मचता है न कितना शोर!
- तुमने सबसे ज़्यादा शोर कहाँ सुना है?
- क्या तुम्हें इतना शोर अच्छा लगता है? क्यों?

रेलगाड़ी का मॉडल बनाने के लिए माचिस के अलावा टिन के डिब्बे भी इस्तेमाल में लाए जा सकते हैं और पहिए बोतल के ढक्कन या बटन से भी बनाए जा सकते हैं।



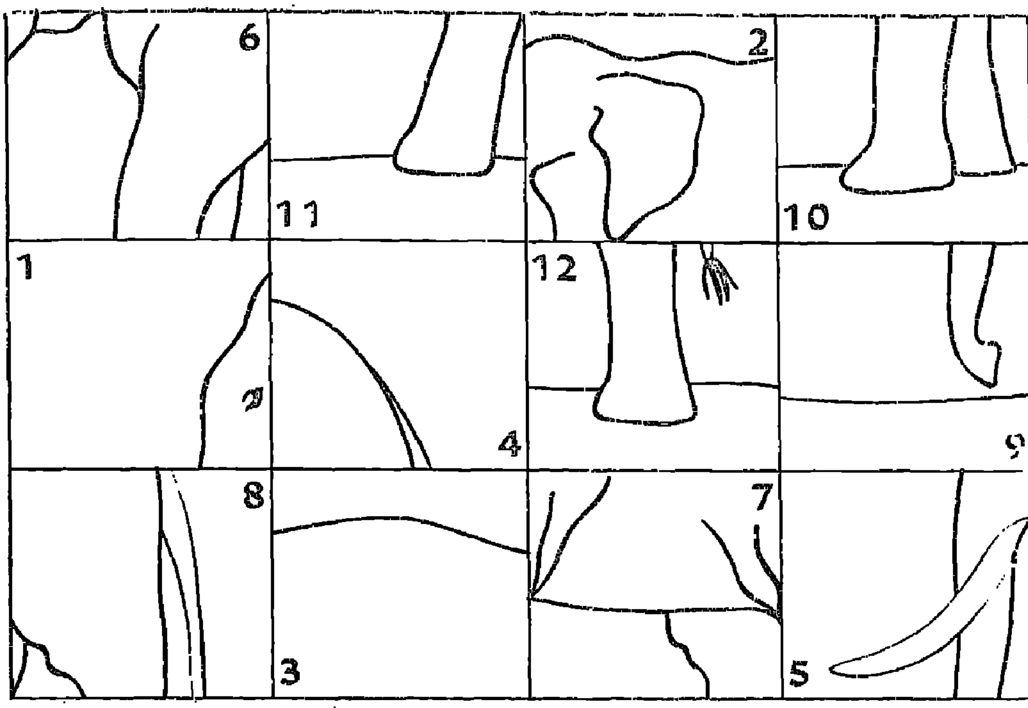
- चित्र में तुम्हें क्या-क्या दिखाई दे रहा है?

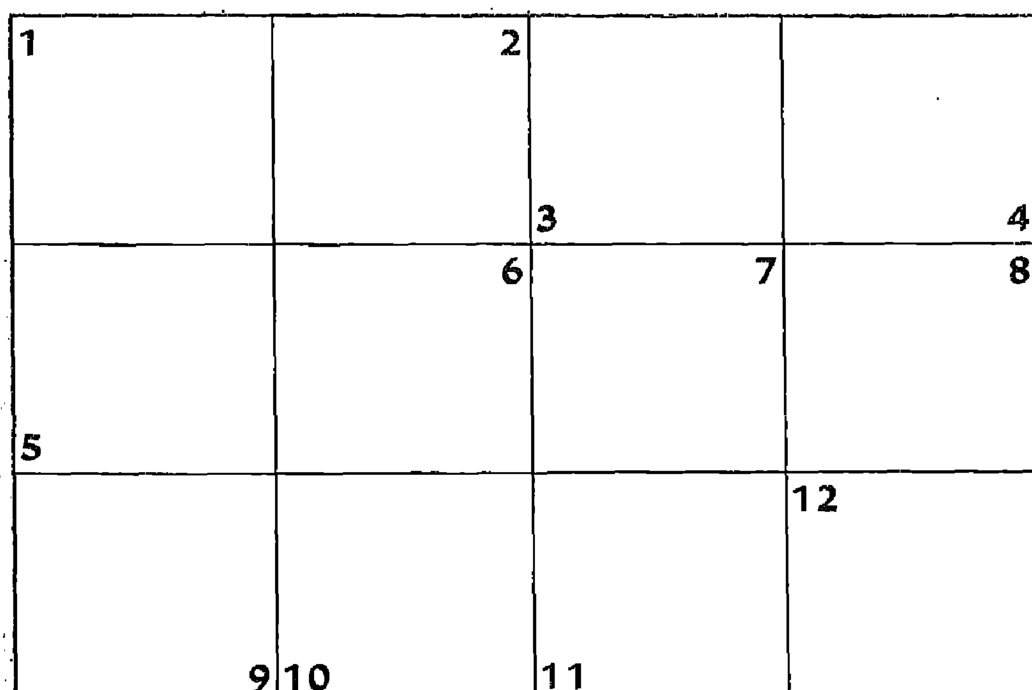
- तुम्हें कौन-कौन से वाहन दिखाई दे रहे हैं?

- ये वाहन क्या-क्या काम कर रहे हैं?

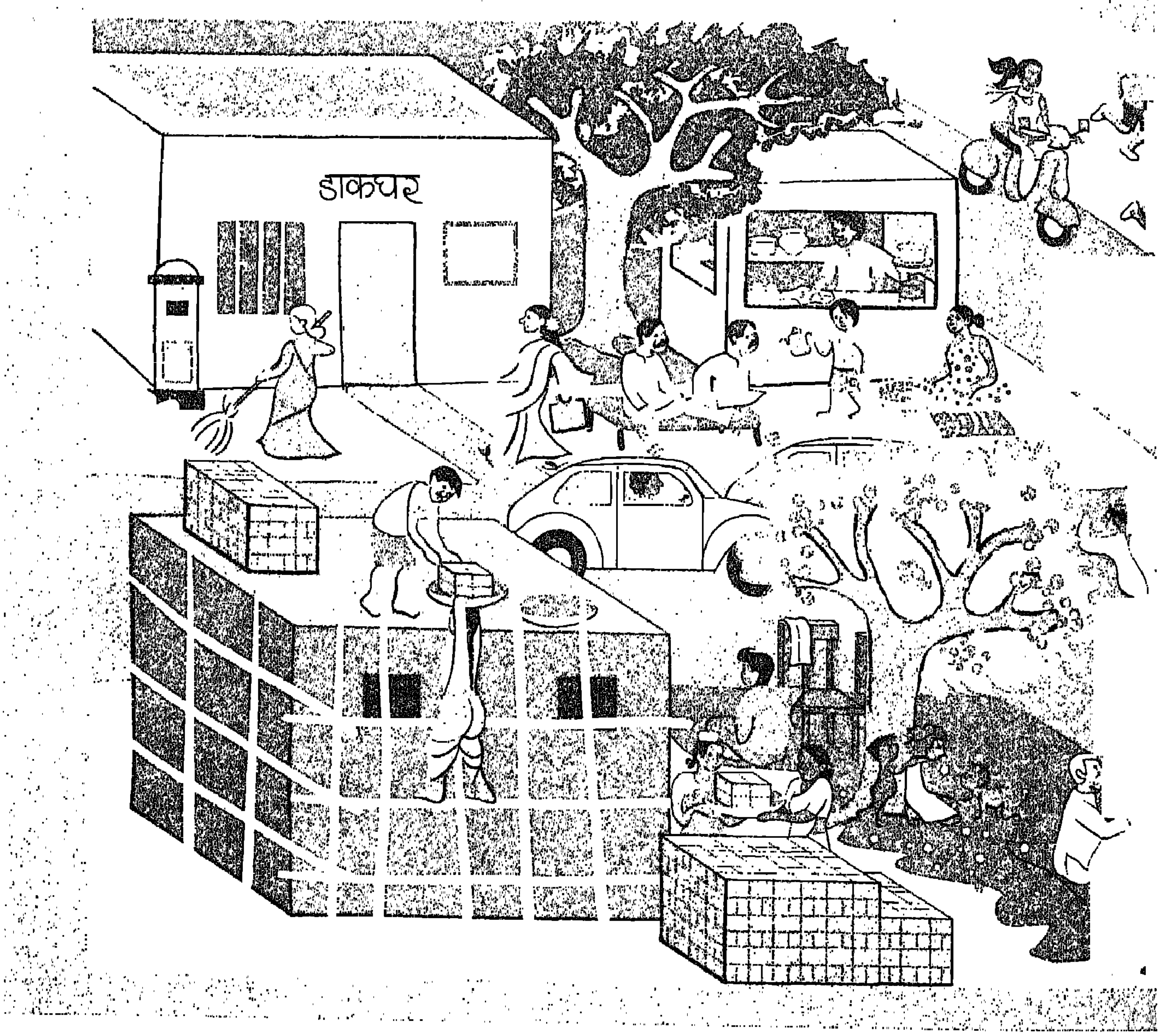
चित्र की मदद से आपातकालीन स्थितियों पर चर्चा की शुरुआत की जा सकती है।

ऊपर के खानों को देखकर नीचे उन्हें क्रम से बनाओ और रंग भरो। देखो क्या बनता है! उसका नाम भी लिखो।



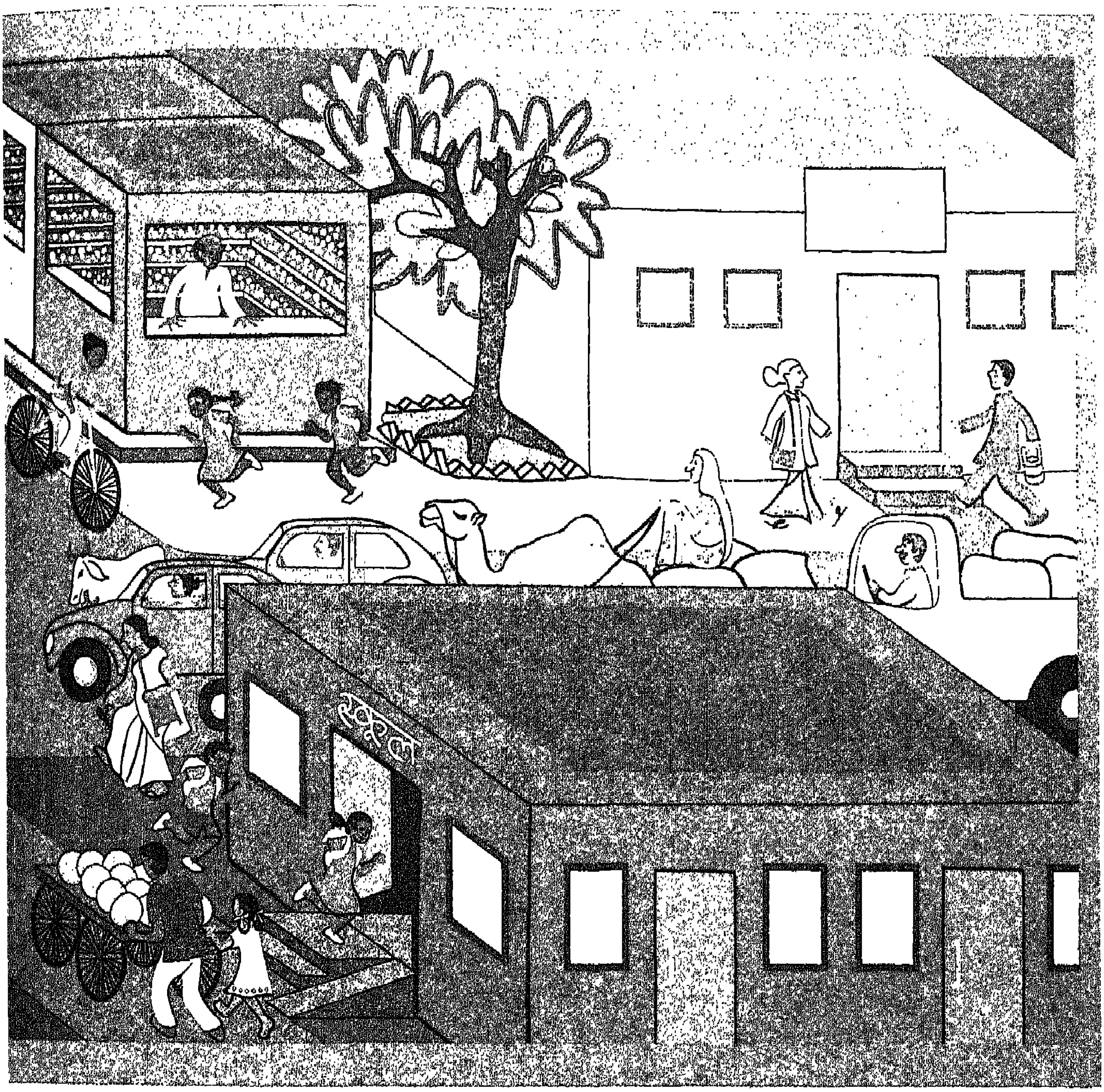


12 काम अपना अपना



रोज़ की तरह बलबीर नाश्ता कर के पहुँच गया चाय की दुकान पर। आज उसके साथ गाँव से आया उसका भाई सतविंदर भी था। चाय वाले ने चाय पकड़ाते हुए कहा – लो अखबार भी पढ़ो।

आप यहाँ दिन भर समय कैसे काटते हो? बैठे-बैठे ऊब नहीं जाते? – सतविंदर ने पूछा।



अरे, समय तो यूँ निकल जाता है, पता ही नहीं चलता! वहाँ देखो, बच्चों को रोज़ की तरह स्कूल पहुँचने में देर हो गई है। भाग रहें हैं सब! वह मैडम भी आज देर से आई हैं। अरे! लगता है, उनकी सैंडल टूट गई है। अब जा रही हैं, जग्गू भाई के पास, सैंडल ठीक करवाने। अच्छा है, जग्गू की सुबह-सुबह कमाई हो गई।

पाठ पढ़ने से पहले यदि बच्चों को ध्यान से चित्र देखने और समझने का मौका दिया जाए तो उनमें चित्र अवलोकन का कौशल विकसित होगा।

वहाँ चंपा बैठी है, अपनी फूलों की टोकरी सजाकर। पोस्टऑफिस में काम करने वाली मैडम रोज़ सुबह उससे फूल खरीदती हैं।

ट्रक में सामान आ रहा है। मकान का काम फिर से शुरू हो गया है। मज़दूर फिर से दिन भर काम में लगे रहेंगे।

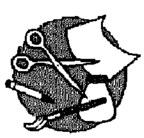
उधर अस्पताल की तरफ़ देखो, डॉक्टर और नर्स साथ-साथ आ रहे हैं।

उस रामुलू को देखो, फल के ठेले के साथ। आजकल वह चिनम्मा को भी अपने साथ काम पर लाता है। चिनम्मा दौड़कर फल पहुँचाती है, पैसे इकट्ठे करती है।

वहाँ नानू नाई अपनी दुकान खोलकर हजामत करने के लिए तैयार बैठा है – पर किस की करे?

चौराहे के बीच खड़ा है इकबाल सिंह, जो दिन-भर सीटी बजाता है। पी ई ई... ऐ, गाड़ी इधर से निकालो... सुना नहीं... ठेला इधर...।

इतना कहकर बलबीर ने चाय का खाली कप रखा और चल दिया पास की दुकान की तरफ़।



एक्टिंग करके दिखाओ – किसी चौराहे पर, हाट-बाज़ार पर लोग क्या-क्या कर रहे होते हैं।



❋ अब ध्यान से चित्र देखकर लिखो कि क्या-क्या काम हो रहे हैं।

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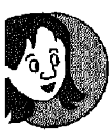
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❋ तुम्हारे घर के आस-पड़ोस में होने वाले कोई पाँच काम लिखो। इन काम करने वालों को क्या कहते हैं उनके काम के सामने लिखो।

काम	क्या कहलाते हैं
स्कूटर-कार ठीक करना	मैकेनिक
______________________	______________________
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पहले चित्र में कुछ इमारतें दिखाई गई हैं। यहाँ उन इमारतों के नाम पर लाल रंग से ◯ बनाओ। अब इनमें से तुम्हारे आस-पास जो इमारतें हैं, उन पर हरे या किसी और रंग से ◯ बनाओ।

डाकघर	अस्पताल	मंदिर
टेलीफोन बूथ	स्कूल	कॉलेज
सरकारी दफ्तर	गिरजाघर	बहुमंजिला मकान
मस्जिद	होटल	बस अड्डा
सिनेमाघर	पुलिस थाना	बैंक
पेट्रोल पंप	दुकान	गुरुद्वारा
धर्मशाला	रेलवे स्टेशन	कचहरी

⁂ किन्हीं पाँच इमारतों के नाम और उनमें क्या काम होते हैं, लिखो।

इमारत का नाम	क्या-क्या काम होता है
अस्पताल	बीमारों का इलाज, बच्चों का टीका

तुमने चित्र में देखा कि नई इमारत बनाने के लिए बहुत सारे लोग एक साथ काम करते हैं।

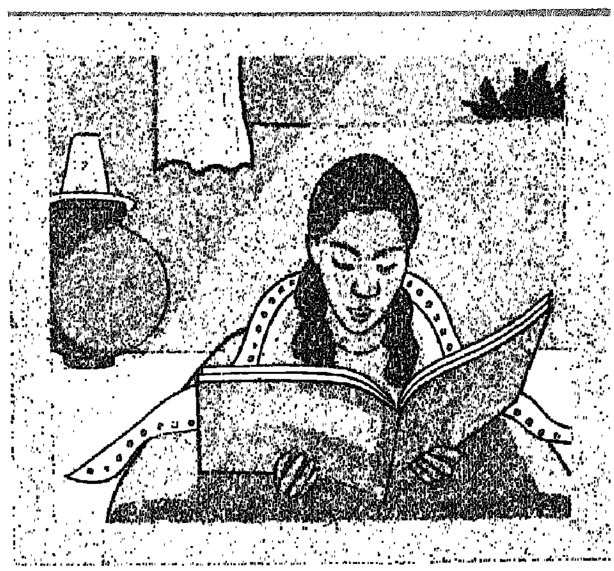
⁂ स्कूल भी ऐसी जगह है, जहाँ कई लोग काम करते हैं। लिखो, स्कूल में क्या-क्या काम होते हैं।

⁂ क्या चित्र में ऐसे बच्चे भी हैं, जो स्कूल नहीं जा रहे? वे क्या कर रहे हैं?

घर का काम

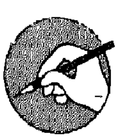
दीपाली भी ऐसी ही एक लड़की है जो स्कूल नहीं जाती। आओ, उसके बारे में जानें। दीपाली अपने भाई-बहनों में सबसे बड़ी है। उसके पिताजी सब्ज़ी की रेहड़ी लगाते हैं।

वे सुबह चार बजे ही मंडी चले जाते हैं । उसकी माँ लोगों के घर बर्तन साफ़ करती है। वह भी सुबह जल्दी घर से चली जाती है। दीपाली अपने भाई-बहनों के लिए खाना बनाती है। घर की सफ़ाई के साथ-साथ वह बर्तन भी माँजती है। उसे रेडियो सुनने का बहुत शौक है। काम करते समय वह साथ-साथ गाने भी सुनती रहती है। काम खत्म करके वह अपने छोटे भाई राजू को पिताजी की रेहड़ी पर छोड़ती है। फिर अपनी छोटी बहनों, सुमन और शीला को स्कूल ले जाती है।



उसके बाद दीपाली अपनी माँ के साथ काम में हाथ बँटाती है। दोपहर को वह अपने भाई-बहनों को घर लाती है। शाम को वह सभी बच्चों के साथ गली में खेलती है। शाम ढलने पर उसकी माँ घर आती है। दीपाली खाना पकाने में माँ की मदद करती है। उसके पिताजी देर रात को ही घर लौटते हैं।

दीपाली रात को बिस्तर पर लेटकर अपनी बहनों की स्कूल की किताबें पढ़ती है। वह भी तो तीसरी कक्षा तक पढ़ी है। तीन साल पहले जब उसका छोटा भाई पैदा हुआ, तब से दीपाली को घर पर रहना पड़ा उसका ध्यान रखने के लिए। वह फिर आगे नहीं पढ़ पाई। दीपाली को लगता है कि किताबें पढ़ने से उसकी दिन भर की थकावट दूर हो जाती है। शायद आज भी उसे मौका मिले, तो वह स्कूल जाना चाहेगी।



❋ दीपाली अपने घर के क्या-क्या काम करती है?

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❊ क्या तुम भी अपने घर के काम करते हो? यदि हाँ, तो कौन-कौन से?

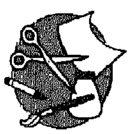
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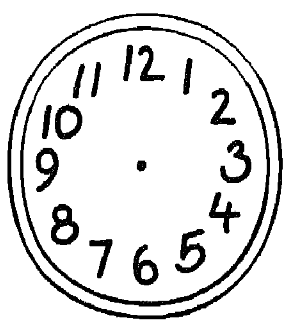
❊ क्या तुम घर के काम के अलावा कोई और काम भी करते हो? क्या?

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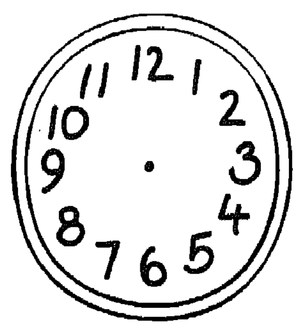
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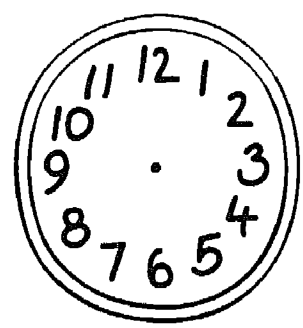
नीचे कुछ काम लिखे हैं। तुम ये काम जिस समय करते हो, घड़ी में दिखाओ।



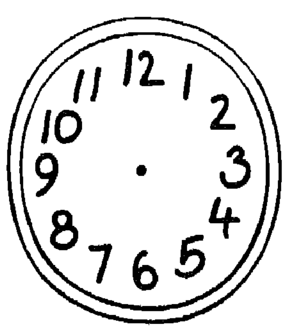
सुबह उठते हो



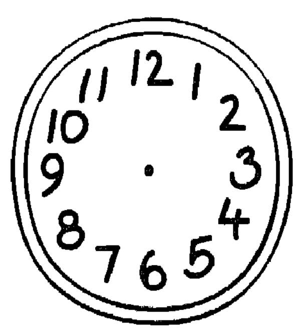
स्कूल जाते हो



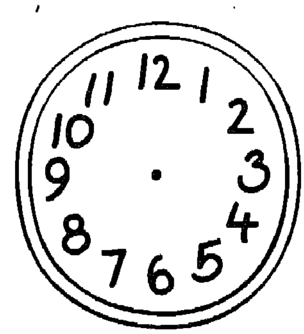
स्कूल से आते हो



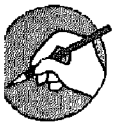
घर में पढ़ाई करने बैठते हो



खेलने जाते हो



रात को सोते हो



❋ तुम्हारे परिवार के कौन-कौन से लोग घर के काम करते हैं? वे क्या-क्या काम करते हैं? तालिका में भरो।

परिवार के लोग	क्या-क्या काम करते हैं
______________________	______________________
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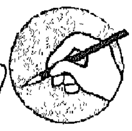
❋ तुम्हारे परिवार के कौन-कौन से लोग पैसा कमाने के लिए काम करते हैं?

परिवार के लोग	क्या-क्या काम करते हैं
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________



तुम्हारे परिवार में कौन-कौन से लोग ऐसे हैं जो काम करते हैं पर उन्हें पैसा नहीं मिलता?

बातचीत के दौरान यह संदेश मिलना आवश्यक है कि सभी काम महत्त्वपूर्ण हैं – कोई भी काम बड़ा या छोटा नहीं होता। यदि बच्चों द्वारा बताए गए कामों में लिंग विषमता दिखाई दे तो उनके कारणों पर चर्चा करना अच्छा रहेगा।

पता लगाओ – तुम्हारे घर के बड़े लोग (दादा-दादी, नाना-नानी) जब बच्चे थे, तब वे क्या-क्या काम करते थे?

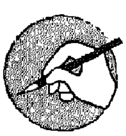
साराम्मा ने घर जाकर अपनी नानी से यही सवाल पूछा। नानी ने कहा कि वह बचपन में लकड़ी इकट्ठा करना, गोबर इकट्ठा कर उसके उपले बनाना, कभी गोबर से घर की लिपाई-पुताई करना – जैसे कामों में बड़ों का हाथ बँटाती थी। मगर अब तो घर में गोबर गैस का चूल्हा है। सीमेंट की दीवारें और फर्श हैं। सारम्मा अब अपने घर के कई ऐसे काम नहीं करती, जो उसकी नानी अपने बचपन में करती थीं।



तुमने पहले लिखा कि तुम क्या काम करते हो और तुम्हारे घर के बड़े लोग अपने बचपन में क्या काम करते थे। ये काम एक जैसे हैं या अलग-अलग?



दीपाली को घर पर काम करने के लिए स्कूल छोड़ना पड़ा। पता करो क्या तुम्हारे घर के आस-पास पाँच साल से बड़ी उम्र के बच्चे रहते हैं, जो स्कूल नहीं जाते।



ऐसे दो बच्चों से बात करके लिखो, वे स्कूल क्यों नहीं जाते।

पहले बच्चे का नाम

स्कूल न जाने का कारण

दूसरे बच्चे का नाम

स्कूल न जाने का कारण

मैं स्कूल से लौट रही थी। घर पर दो लोगों को अपनी बात सबसे पहले बताना चाहती थी। वे मेरी बातों से सबसे ज़्यादा खुश होते हैं।

पहली तो हैं मेरी नानी। वे उत्सुक रहती हैं मेरी बात सुनने को। मेरे स्कूल से लौटने का इंतजार करती हैं। उनकी उम्र कुछ ज़्यादा है और उनकी कमर में भी दर्द रहता है। नानी ऊँचा सुनती हैं और दिखता भी कम है। रोज़ सुबह पापा उनको अखबार ज़ोर-ज़ोर से पढ़कर सुनाते हैं। नानी अपना बाकी सारा काम खुद करती हैं। उनकी कोई मदद करे, तो वे परेशान हो जाती हैं। दिखता है कम पर सब्ज़ी काटने का बहुत शौक है। कहती हैं – आजकल के बच्चों को सब्ज़ी भी काटनी नहीं आती। मोटा-मोटा और टेढ़ा-मेढ़ा काटकर रख देते हैं।



दूसरे हैं, मेरे रवि भैया। रवि भैया हमारे घर में ही रहते हैं। मैं उन्हें रवि भैया कहती हूँ और वे मेरे पापा-मम्मी को कहते हैं – भैया-भाभी। हमारा क्या रिश्ता है, मैं नहीं जानती पर वे हैं मेरे प्यारे भैया। वे मेरे सवालों का उत्तर देने के लिए हमेशा तैयार रहते हैं। कभी नहीं कहा – बाद में बताऊँगा।

रवि भैया कॉलेज में पढ़ाते हैं। कॉलेज के बच्चे उनकी बहुत इज़्ज़त करते हैं। कुछ तो उनसे पढ़ने घर भी आते हैं। रवि भैया को संगीत सुनने, नाटकों में भाग लेने, दोस्तों के साथ घूमने और बातें करने का बहुत शौक है। खूब हँसते-हँसाते भी हैं।

भैया जब घर के बाहर जाते हैं, तब एक सफ़ेद छड़ी ले जाते हैं। उनको घर

के अंदर घूमता देख कोई नहीं कह सकता कि उन्हें दिखता नहीं है। वे अपना काम स्वयं करना चाहते हैं। कोई उन्हें ज़बरदस्ती सहारा दे तो वे नाराज़ हो जाते हैं। जब कभी उन्हें मदद की ज़रूरत होती है तो वे माँग लेते हैं।

कुछ बच्चे रवि भैया से कॉलेज की किताबें ले जाते हैं और कुछ दिन बाद किताबों के साथ उन्हें टेप दे जाते हैं। रवि भैया टेप पर ही उन किताबों को सुनते रहते हैं। भैया के पास मोटे कागज़ की भी कई किताबें हैं, जिनमें बहुत सारे उभरे बिंदु हैं। उन पर वे हाथ फेरकर पढ़ते हैं।

भैया को छेड़ने के लिए मैं कभी-कभी उनकी छड़ी की जगह बदल देती हूँ। वे परेशान तो होते हैं, पर नाराज़ नहीं। मैं उनकी प्यारी बहन सीमा जो ठहरी!

मैं अभी दरवाज़े पर पहुँची ही थी कि भैया बोल उठे – क्यों सीमा, बहुत खुश हो?

भैया मुझे ही नहीं, घर के सभी लोगों को उनकी आहट से पहचान लेते हैं। अक्सर यह भी भाँप लेते हैं कि मैं खुश हूँ या उदास।

भैया! आखिर मैं फुटबॉल टीम में शामिल हो ही गई हूँ – मैंने भैया को अपनी खबर सुनाई। भैया मेरी पीठ थपथपाकर बोले – आज से तुम ही हो मेरी फुटबॉल की उस्ताद!

- सीमा के पापा उसकी नानी को अखबार ज़ोर-ज़ोर से पढ़कर सुनाते हैं। तुम बड़ी उम्र वाले लोगों की कैसे मदद करते हो?

____

- जब कोई व्यक्ति बूढ़ा हो जाता है, तब उनको क्या-क्या तकलीफ़ें हो सकती हैं?

____

- रवि भैया बिना देखे कई सारी बातें कैसे जान जाते हैं?

____

कहानियों में बच्चे रुचि लेते हैं तथा कहानी के पात्रों की मदद से संवेदनशीलता पैदा की जा सकती है।

❊ क्या तुम्हें कभी छड़ी की ज़रूरत पड़ी है? कब?

___

❊ क्या तुम सोच सकते हो तुम्हें छड़ी की ज़रूरत कब पड़ सकती है?

___

❊ हम उन लोगों की मदद कैसे कर सकते हैं, जिन्हें दिखता नहीं है?

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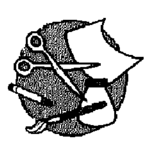
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क्या तुम्हारे परिवार में कोई ऐसा सदस्य है, जो देख, बोल या सुन नहीं सकता?

क्या तुम किसी ऐसे व्यक्ति को जानते हो? इनके काम में लोग कैसे मदद करते हैं?

तुमने कहानी में पढ़ा कि रवि भैया देख नहीं सकते। लेकिन वे अपने सारे काम खुद ही करते हैं। वे अलग तरह की किताबें पढ़ते हैं। वे कैसे अपना काम करते होंगे – यह समझने के लिए पहले आँखें बंद करके पहचानने का खेल खेलो।



आँख मिचौनी

समूह में एक बच्चा अपनी आँखों पर पट्टी बाँधे। फिर बाकी बच्चे एक-एक करके चुपचाप उस बच्चे के पास आएँ। आँखें बंद किया बच्चा दूसरे पर हाथ फेरकर उसे पहचानने की कोशिश करे। ध्यान रहे कोई आवाज़ न करे। क्यों?

इसी तरह बारी-बारी सभी बच्चों की आँखों पर पट्टी बाँधो ताकि वे दूसरे बच्चों को पहचानने की कोशिश करें।

स्वयं को किसी और की परिस्थिति में रखने से हम उनकी समस्याओं को बेहतर समझ पाते हैं।



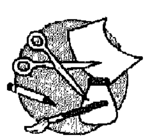
अब आपस में बात करो और बताओ –

- कितने बच्चे छूकर किसी को पहचान पाए?
- कितने बच्चे आवाज़ सुनकर बच्चों को पहचान पाए?
- दोनों में से क्या ज़्यादा आसान था?



- छू कर बताओ तुम्हारे मुँह में कितने दाँत हैं। कक्षा में किन बच्चों के सबसे ज़्यादा दाँत हैं?
- क्या-क्या चीज़ें तुम केवल छूकर जान सकते हो?
- आँख बंद करके बैठो और सुनो। किस-किस की आवाज़ें सुनाई देती हैं? किन लोगों की आहट पहचान सकते हो?
- केवल सूँघ कर क्या तुम किसी व्यक्ति को या किसी जानवर को पहचान सकते हो?

जो लोग देख नहीं सकते उनके पढ़ने का एक खास तरीका है, जिसे ब्रेल कहते हैं। ब्रेल एक मोटे कागज़ पर एक नुकीले औज़ार से बिंदु बना कर लिखा जाता है। ब्रेल कागज़ पर हाथ फेर कर पढ़ा जाता है कि उस पर क्या लिखा है।



आओ, अब यह देखते हैं कि बिना देखे किसी आकार को पहचानना मुश्किल है या आसान।

एक रेगमाल की शीट लो। उस पर मोटे ऊन या सुतली को दबाकर किसी चीज़ का आकार बनाओ। अपने दोस्त को कहो कि वह आँखें बंद करके, हाथ फेरकर बताए कि तुमने क्या आकार बनाया है।

क्या यह बच्चों के लिए पहचानना आसान था या मुश्किल?

चलो, अब तुम देखो कि क्या तुम हाथ फेर कर पढ़ सकते हो।

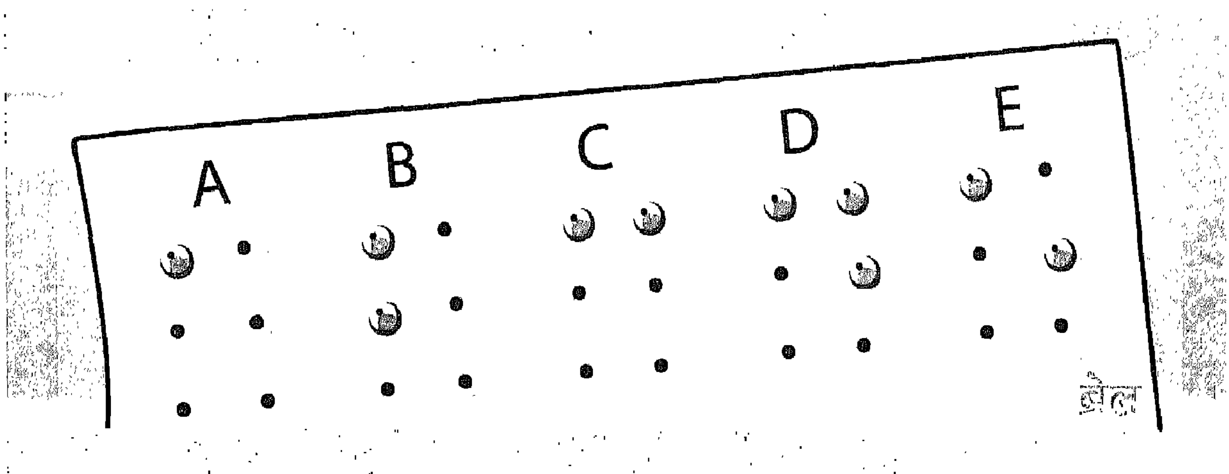
एक मोटे कागज़ का टुकड़ा लो। उस पर एक प्रकार या कील की नोक से कोई खास आकार बनाते हुए थोड़ी-थोड़ी दूरी पर छेद कर दो। तुम देखोगे कि कागज़ एक तरफ़ से उभरा है। अब अपने दोस्त से कहो कि वह आँखें बंद करके तुम्हारे कागज़

पर हाथ फेरे और बताए कि तुमने क्या बनाया है। है न मुश्किल यह बताना? सोचो कि लोग देखे बगैर कैसे इतना पढ़ लेते हैं।

आओ ब्रेल के बारे में जाने

तुमने देखा कि रवि भैया एक खास तरह की किताबें ही पढ़ सकते हैं। यह किताबें कैसे बनीं? इसके बारे में सबसे पहले किसने सोचा होगा?

आओ इसके बारे में कुछ बातें जानें।



लुई ब्रेल फ्राँस देश का रहने वाला था। वह जब तीन साल का था, एक दिन अपने पिता के औजारों से खेल रहा था। अचानक एक नुकीले औजार से उसकी आँख में चोट लग गई और आँखें खराब हो गई। उसे आँखों से दिखना बिल्कुल बंद हो गया। उसकी पढ़ने में बहुत रुचि थी। उसने हार नहीं मानी। वह पढ़ने के लिए तरह-तरह की तरकीबें सोचता रहता था। उसने आखिर ढूँढ़ ही लिया एक तरीका – छूकर पढ़ने का। यह बाद में ब्रेल लिपि के नाम से जानी जाने लगी।

इस तरह की लिपि में मोटे कागज़ पर उभरे हुए बिंदु बने होते हैं। उभरे होने के कारण इन्हें छूकर पढ़ा जा सकता है। यह लिपि छः बिंदुओं पर आधारित होती है।

आजकल ब्रेल में नए-नए परिवर्तन हुए हैं, जिससे इसे पढ़ना-लिखना और भी आसान हो गया है। ब्रेल लिपि अब कंप्यूटर के द्वारा भी लिखी जा सकती है।

बच्चे ब्रेल लिपि को देखेगें तो बेहतर ढंग से समझ पाएँगें। ब्रेल लिपि की जानकारी देते समय बच्चों को वास्तविक ब्रेल शीट दिखाना अच्छा रहेगा।

वेणु का परिवार | रानी का परिवार



दोनों परिवारों में कौन किस तरह के काम कर रहा है?

- क्या तुम्हारा परिवार इन दोनों में से किसी एक परिवार जैसा है? यदि हाँ तो किसके जैसा? तुम्हारा परिवार उस परिवार से कैसे मिलता है?

रूढ़िबद्ध धारणाओं जैसे लड़का-लड़की में भेदभाव (लिंग विषमता) पर चर्चा संवेदनशीलता से होनी चाहिए ताकि बच्चे उन पर सवाल तो कर सकें और किसी की भावनाओं को ठेस भी न पहुँचे।

❋ यदि नहीं तो अपने परिवार के बारे में बताओ।

❋ क्या तुम्हारे घर में सब एक साथ खाना खाते हैं? यदि नहीं तो क्यों?

❋ सबसे आखिर में खाना कौन खाता है?

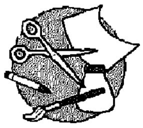
❋ खाना बनाने में कौन मदद नहीं करता और क्यों?

❋ तुम्हारे घर में और तुम्हारे एक दोस्त के घर में तालिका में दिए गए काम कौन करता है – पता लगाओ और लिखो। कुछ और काम तालिका में जोड़ो।

काम	कौन करता है	
	तुम्हारे घर में	तुम्हारे दोस्त के घर में
1. खाना बनाना		
2. बाज़ार से सामान खरीदना		
3. झाड़ू लगाना		
4. बर्तन साफ़ करना		
5. पानी भरना		
6.		
7.		
8.		

❊ घर में ज़्यादा काम कौन करता है?

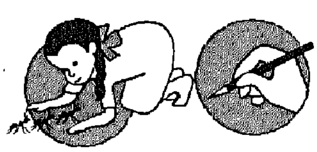
तुम्हारे	______
दोस्त के	______



जो खाया कहाँ से आया?

नीचे कुछ खाने–पीने की चीज़ों के नाम लिखे हैं। जो चीज़ें हम पेड़–पौधों से लेते हैं उन पर हरे रंग से ◯ लगाओ। जो चीज़ें हमें जानवरों से मिलती हैं उन पर लाल रंग से ◯ लगाओ। खाली जगह में कुछ नाम तुम भी जोड़ो।

शहद	हल्दी	मछली	______
मक्का	दूध	नींबू	______
पालक	आलू	अजवाइन	______
अंडा	माँस	केला	______
टमाटर	प्याज	______	______



जब तुम बीमार होते हो तो क्या पेड़–पौधों से मिलने वाली चीज़ों को दवाई के रूप में लेते हो? कब कौन–सी चीज़ लेते हो –

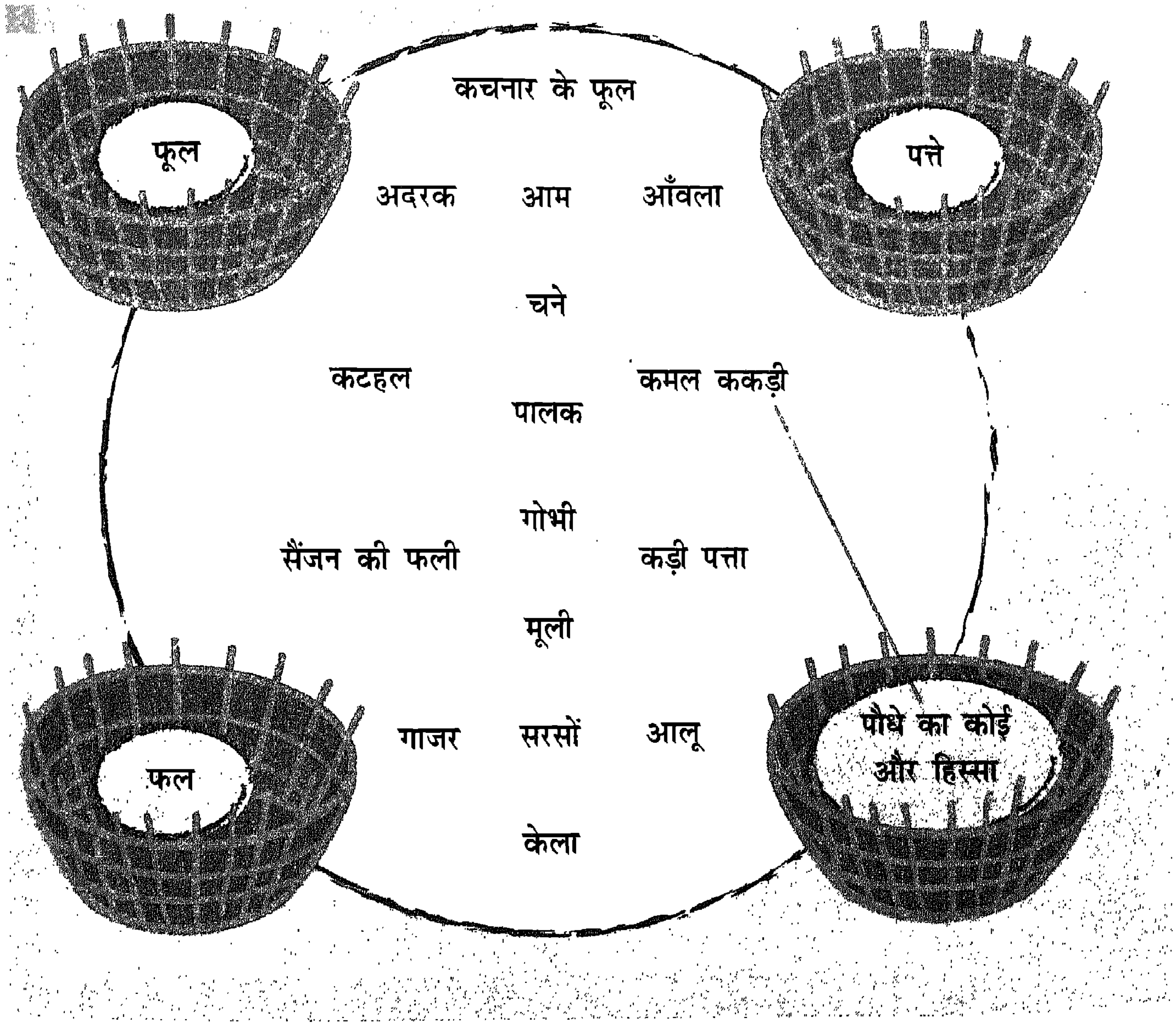
- चोट लगने पर ______
- पेट दर्द होने पर ______

बच्चों के परिवेश में दवाई के रूप में प्रयोग किए जाने वाले पेड़–पौधों की पहचान व उनका उपयोग पारंपरिक ज्ञान की परख और समझ का मौका देगा।

♦ खाँसी के लिए ____________________

♦ दाँत दर्द होने पर ____________________

हर चीज़ के लिए सही टोकरी चुनो। लाइन बनाकर मिलान करो।

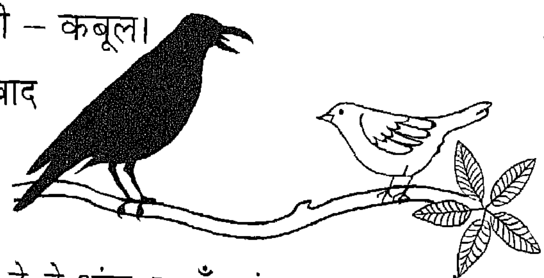


इस अभ्यास में कुछ पौधों के ऐसे भाग दिए गए हैं, जो कि हमारे भोजन का हिस्सा हैं, बातचीत के द्वारा इस सूची को बढ़ाया जा सकता है।

एक थी चिड़िया, नाम था फुदगुदी। एक था कौआ, नाम था भनाते। दोनों में गहरी दोस्ती थी। एक दिन भनाते ने कहा – अरे ओ फुदगुदी! अगर पहले तूने अंडे दिए तो मैं खाऊँगा और अगर मैंने पहले अंडे दिए तो तू खा लेना। कबूल?

फुदगुदी बोली – कबूल।

कुछ दिन बाद फुदगुदी ने अंडा दिया।



भनाते बोला – दे-दे अंडा, खाऊँ अंडा, दे-दे, दे-दे, दे-दे।

फुदगुदी गई डर। बोली – ठीक, भाई ठीक। पर पहले चोंच धो आओ नदी में।

भनाते गया नदी तट पर। बोला – हे नदी!

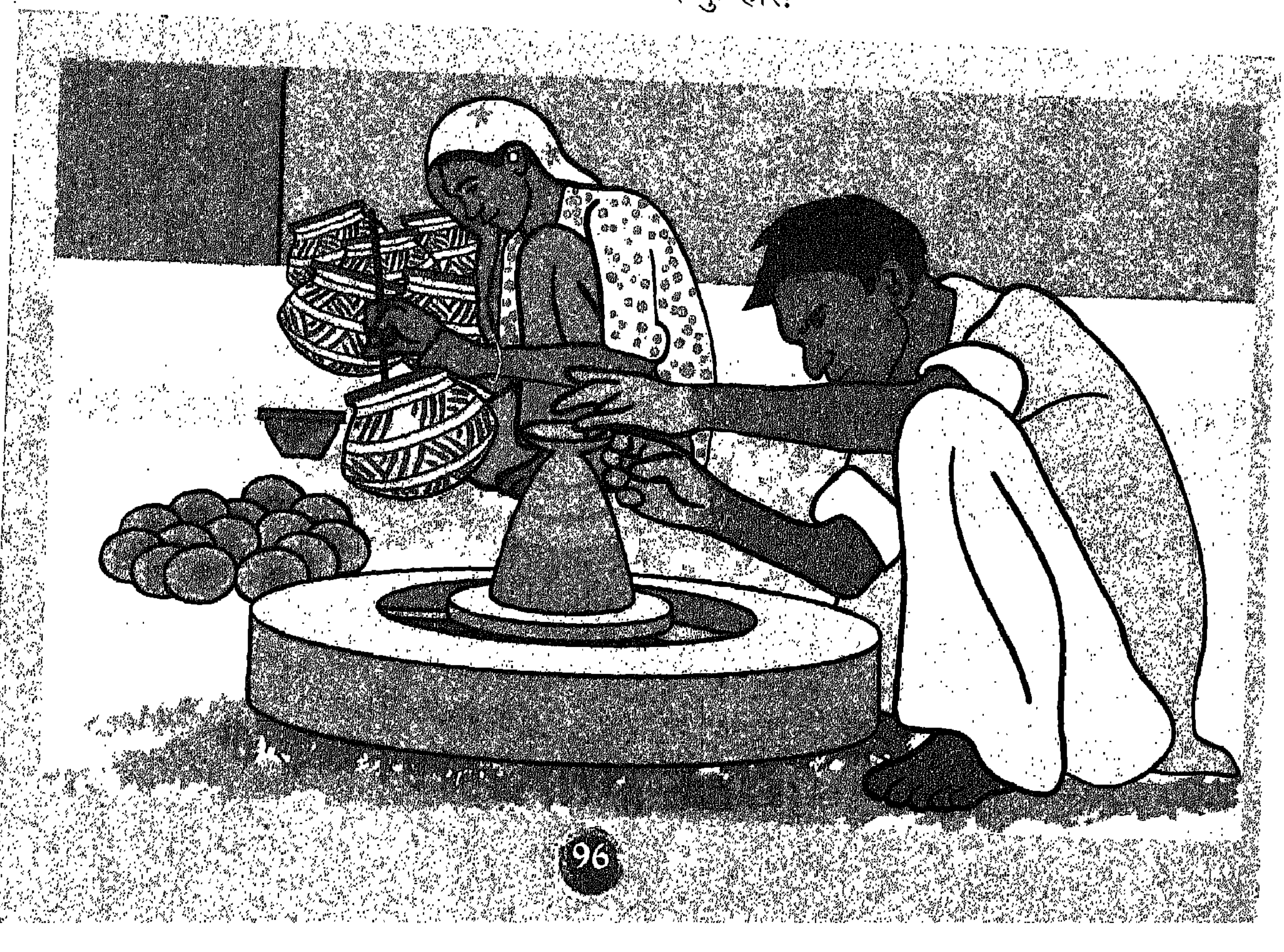
नदी बोली – क्या भाई भनाते?

भनाते बोला – नदी-नदी पानी दे-दे।

ठंडा पानी लाऊँगा,
चोंच धोकर आऊँगा,
फिर मैं अंडा खाऊँगा।

नदी बोली – पानी भरेगा कैसे? कुल्हड़ तो ला।

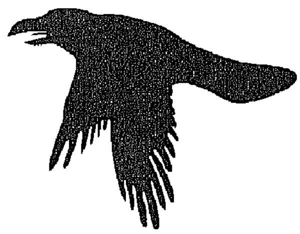
भनाते गया कुम्हार के पास। बोला – रे कुम्हार!



कुम्हार बोला – क्या भाई भनाते?

भनाते बोला – मुझे एक कुल्हड़ दे-दे।

कुल्हड़ लेकर जाऊँगा,
ठंडा पानी लाऊँगा,
चोंच धोकर आऊँगा,
फिर मैं अंडा खाऊँगा।



कुम्हार बोला – कुल्हड़ बने कैसे? पहले ला मिट्टी खदान से।

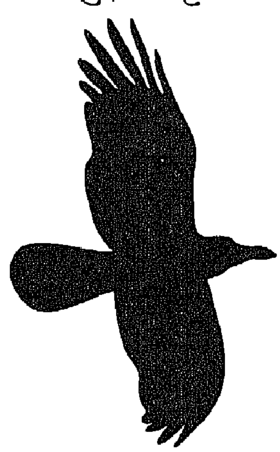
भनाते गया मिट्टी की खदान पर।

बोला – रे मिट्टी-खदान।

मिट्टी-खदान बोला – क्या भाई भनातें?

भनाते बोला – मिट्टी-खदान मुझे मिट्टी दे-दे।

मिट्टी लेकर जाऊँगा,
कुल्हड़ मैं बनवाऊँगा,
ठंडा पानी लाऊँगा,
चोंच धोकर आऊँगा,
फिर मैं अंडा खाऊँगा।



मिट्टी-खदान बोला – खोदें मिट्टी कैसे? पहले ला खुरपी लोहार से।

भनाते गया लोहार के पास।

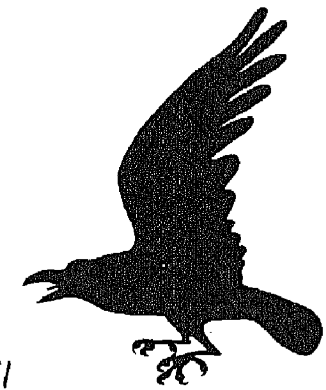
बोला – रे लोहार!



लोहार बोला – क्या भाई भनाते?

भनाते बोला – लोहार मुझे एक खुरपी दे-दे।

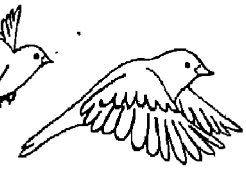
खुरपी लेकर जाऊँगा,
मिट्टी मैं खुदवाऊँगा,
कुल्हड़ मैं बनवाऊँगा,
ठंडा पानी लाऊँगा,
चोंच धोकर आऊँगा,
फिर मैं अंडा खाऊँगा।



लोहार बोला – ले-ले खुरपी प्यार से, पर लाना वापिस याद से।

खुरपी लेकर भनाते गया खदान पर। चिकनी मिट्टी खोदी और कुम्हार को दे दी। कुम्हार ने कुल्हड़ बनाया। कौए ने उसमें पानी भरा और धो ली अपनी चोंच। फिर दौड़ लगाई फुदगुदी का अंडा खाने को।

इसी बीच फुदगुदी चिड़िया का अंडा फूट कर चूज़ा बाहर आ गया था और बच्चा फुर्र हो गया था भनाते कौए की पहुँच से बहुत दूर।

(अन्नपूर्णा सिन्हा द्वारा भोजपुरी में रचित कहानी का हिंदी रुपांतर)

इस कहानी पर नाटक करने में बच्चों को बहुत मजा आएगा और क्रियाओं का क्रम समझने में भी सहायता मिलेगी।

❋ कौए को कुल्हड़ की ज़रूरत क्यों पड़ी?

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❋ एक कुल्हड़ बनाने में किन-किन लोगों ने कौए की मदद की?

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❋ कुल्हड़ बनाने के लिए कुम्हार को किस-किस सामान की ज़रूरत पड़ी?

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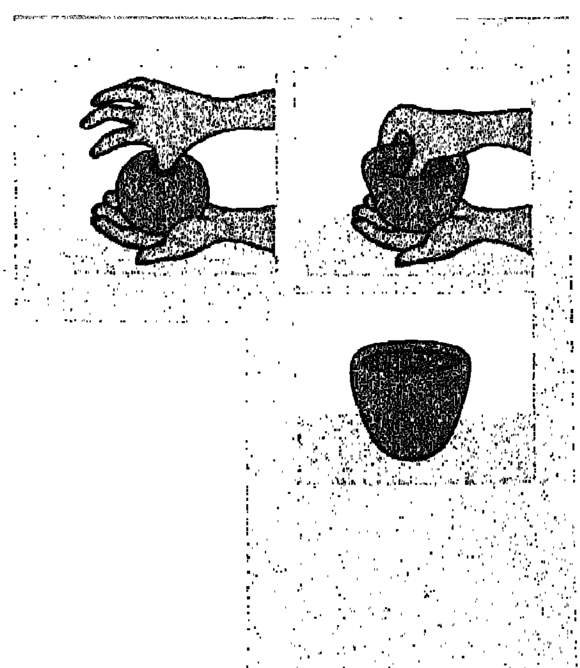
❋ क्या तुम्हारे घर में मिट्टी के बर्तन हैं? कौन-कौन से?

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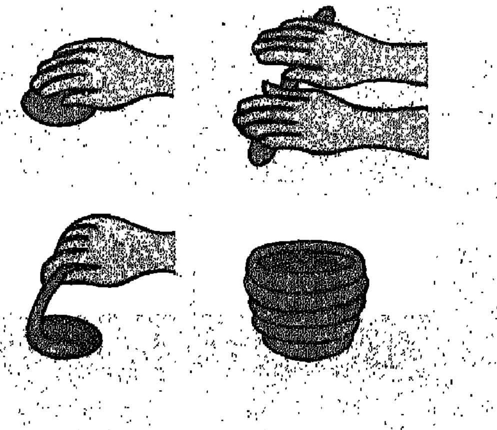
अगर तुम्हें कोई चिकनी मिट्टी दे, तो क्या तुम कोई बर्तन बना पाओगे?

❋ *मिट्टी का लड्डू, लड्डू से कटोरी*



चिकनी मिट्टी को गूँध कर एक बड़ा-सा लड्डू बनाओ। इस लड्डू में गड्ढा बनाकर उसे कटोरी जैसा रूप दो। अपनी कटोरी को सुखाओ और सजाओ। इसमें अपने मन की चीज़ें रखो।

❊ मिट्टी का साँप, साँप का बर्तन



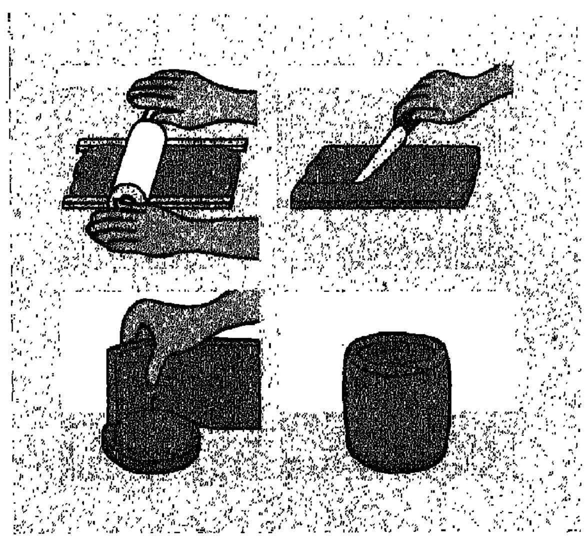
चिकनी मिट्टी को पानी से गूँध लो। थोड़ी मिट्टी को पानी में घोल कर अलग रख लो। यह मिट्टी के दो टुकड़ों को आपस में जोड़ने के काम आएगी।

गुँधी हुई मिट्टी का कुछ भाग लेकर उसे मोटी रोटी की तरह चपटा कर लो। यह बर्तन का तला बन गया। बाकी गुँधी हुई मिट्टी को साँप जैसा लंबा बना लो।

चित्र में देखो और उसी मिट्टी की तरह बने साँप को तले पर चिपकाकर बर्तन बनाओ।

❊ मिट्टी की रोटी, रोटी का बर्तन

चित्र को देखकर इस तरह से बर्तन बनाओ।





❊ अगर इन बर्तनों में पानी डालकर रातभर रखो, तो क्या होगा?

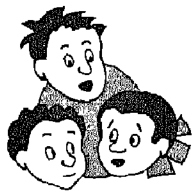
❊ हम अपने घर या स्कूल में मटके में पानी रखते हैं। वह मटका पानी से गल क्यों नहीं जाता?

❊ क्या तुमने कभी ईंट या बर्तनों को भट्टी में पकाते देखा है?

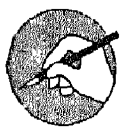


अगर हम सबके पास केवल मिट्टी के बर्तन होते और सारे टूट या गल जाते, तब हम क्या करते?

मिट्टी से बर्तन बनाते हुए कपड़े तो गंदे होंगे पर बच्चों को करके सीखने का आनंद भी मिलेगा।



- यदि हमारे पास मिट्टी के बर्तन हों और वे सभी टूट जाएँ अथवा खराब हो जाएँ तो हम क्या करेंगे।
- सोचो कि बहुत साल पहले जब बर्तन नहीं थे, तब लोग क्या करते थे?
- लोगों ने बर्तन क्यों बनाए होंगे?



मान लो, एक दिन दुनिया से सारे बर्तन गायब हो जाएँ, तो तुम्हारे घर में क्या होगा?

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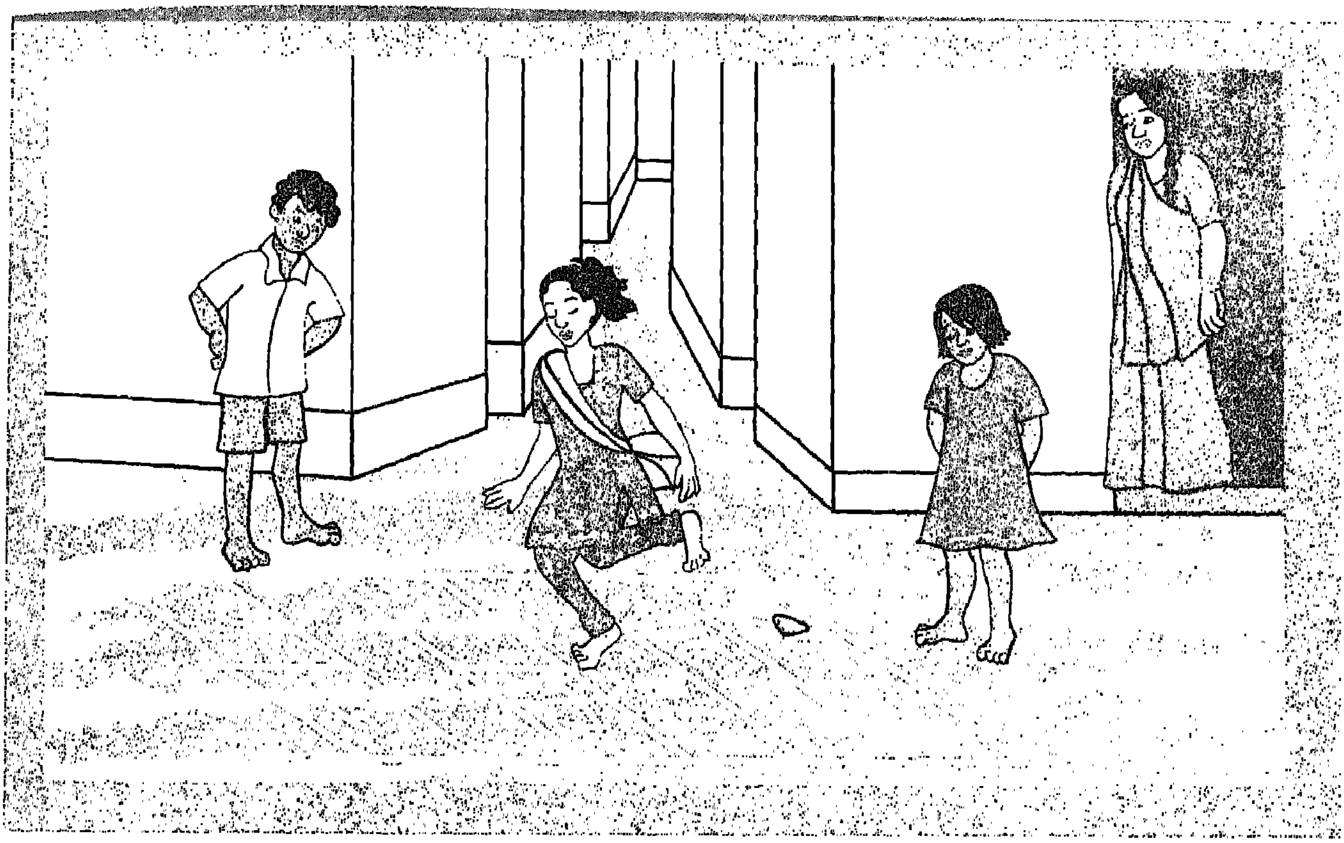
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जानते हो?

बहुत, बहुत, बहुत साल पहले एक समय ऐसा था, जब लोगों के पास बर्तन ही नहीं थे। पर लोगों को खाने-पीने की चीज़ों को पकाने और सामान रखने के लिए बर्तन की ज़रूरत पड़ने लगी। बहुत कोशिश करने और दिमाग लगाने के बाद, लोग बर्तन बनाना सीख गए। शुरू में बनाए गए बर्तन पत्थर और मिट्टी के थे। पत्थर के बर्तन हाथों से खोदकर या कुरेद कर और मिट्टी के बर्तन गूँध कर, हाथों से बनाए गए थे। लोगों ने यह भी खोज लिया कि मिट्टी के बर्तनों को मज़बूत बनाने के लिए उन्हें आग में पकाना चाहिए।



गली में सभी बच्चे **स्टापू** खेल रहे थे। अवंतिका भी अपनी बहन नंदिता के साथ वहीं खेल रही थी। पर नंदिता को ठीक से खेलना नहीं आ रहा था।

अवंतिका : अरे नंदिता, सुनो! ठीक से समझ लो। **ठिप्पी** को पहले खाने में डालो। फिर ठिप्पी वाले खाने को छोड़ कर खानों में एक पैर से छलाँग लगाओ। लाइन पर पैर रखोगी तो खेल से बाहर। आखिरी खाने में उछलकर वापिस घूमो। वापसी में ठिप्पी ज़रूर उठाकर लाना। याद रहे, 4–5 और 7–8 खाने में ही दोनों पाँव रख सकते हैं। अब, दूसरे खाने में ठिप्पी डालो। इसी तरह सभी खानों में बारी-बारी ठिप्पी डालकर खेलो।

पाठ में कुछ स्थानीय खेल जैसे स्टापू, पिट्ठू, अष्टा-चंगा-पे आदि तथा उन्हें खेलने में इस्तेमाल की गई चीज़ें जैसे ठिप्पी के नाम आए हैं। बच्चों से इनके स्थानीय नाम पर बातचीत करवाई जा सकती है।

बच्चे फिर से खेल में लग गए। चाची बहुत देर से उन्हें खेलता देख रही थीं। उनका भी खेलने का मन कर रहा था। जब उनसे रुका नहीं गया तो वे बोल पड़ीं – बच्चों, मैं भी तुम्हारे साथ स्टापू खेलूँ?

यह सुनकर सब बच्चे हँसने लगे।

अवंतिका : चाची, आप खेलेंगीं!

चाची : तुम सोचती हो, मुझे स्टापू खेलना नहीं आता? अरे, तुम्हारी उम्र में तो हम कितने ही खेल खेलते थे।

नंदिता : कौन-कौन से खेल, चाची?

चाची : एक टाँग से दौड़ना, छुपनछुपाई, ऊँच-माँगी-नीच, गिट्टे और न जाने क्या-क्या। और कबड्डी में तो हमारी टीम दस गाँव में सबसे आगे थी।

रजत : चाची, हमें तो खेलने के लिए समय ही नहीं मिलता। आपको खेलने का इतना समय कहाँ से मिलता था?

चाची : तुम्हें टी.वी. देखने से फुरसत मिले, तब न।

नंदिता : चाची, क्या चाचा भी ये सब खेल खेलते थे?

चाची : पूछो मत। तुम्हारे चाचा बताते हैं कि वे सारा दिन गिल्ली-डंडा, कंचे, अष्टा-चंगा-पे, पिट्ठू और न जाने क्या-क्या खेलते रहते थे। पतंग के चक्कर में खाना तक भूल जाते थे।

नंदिता : आओ! खेलो न।

चाची बच्चों के साथ खेलने लगी। अभी कुछ ही देर खेल पाए थे कि बारिश आ गई।

सब बच्चे : उफ हो!

चाची : चलो, हमारे घर चलो, अंदर चलकर खेलते हैं।



यह सुनकर सब बच्चे खुश हो गए।

सब बच्चे : चलो, चलो, चाची के घर चलकर खेलते हैं।

सब बच्चे चाची के घर आ गए। अंदर, चाचा और बुआ शतरंज खेल रहे थे।

अवंतिका : चाची, क्या खेलें?

रजत : चाची, घर-घर खेलते हैं।

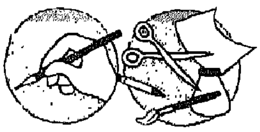
कुछ बच्चे : हाँ, हाँ, घर-घर का खेल खेलते हैं।

रजत : अगर गुड़िया होती तो हम गुड़िया से खेलते।

चाची : गुड़िया चाहिए? अभी बना लेते हैं गुड़िया।

चाची ने एक पुराना कपड़ा लिया और बच्चों ने चाची की मदद से गुड़िया बना ली।

कुछ बच्चे गिट्टे खेलना चाहते थे और कुछ अष्टा-चंगा-पे। सब अपने-अपने समूह बनाकर खेलने लगे।



पाठ में जिन-जिन खेलों के नाम आए हैं उनके नाम तालिका में लिखो। इनमें से जो खेल घर के अंदर खेले जाते हैं उनके सामने ⌂ बनाओ। घर के बाहर खेले जाने वाले खेल के सामने 🌳 बनाओ। खेल के सामने खिलाड़ियों की संख्या लिखना मत भूलना। खेल के खेलने में अगर कुछ चीज़ों की ज़रूरत होती है तो उनके नाम भी लिखो।

पाठ में आए खेलों के नाम	⌂/🌳	कितने खिलाड़ी	किन चीज़ों की ज़रूरत

तालिका के भरने में कुछ बच्चों को मदद की आवश्यकता हो सकती है। बच्चों को एक-दूसरे की मदद करने का मौका दें। एक-दूसरे से बच्चे सहजता से बहुत कुछ सीखते हैं।

❊ क्या तुम अपने इलाके के किसी मशहूर खिलाड़ी का नाम जानते हो? यदि हाँ तो उसका नाम और वह किस खेल से जुड़ा है, लिखो।

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❊ तुम गेंद से खेले जाने वाले कितने खेल जानते हो? दी गई गेंद में उनकी सूची बनाओ।

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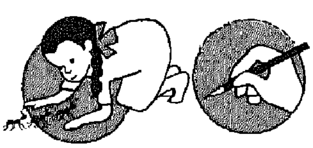
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❊ क्या तुमने सानिया मिर्ज़ा का नाम सुना है? वे भी गेंद से ही एक खेल खेलती हैं। पता करो और लिखो कौन-सा।

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❊ तुम्हें कौन-सा खेल सबसे ज़्यादा पसंद है?

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अपने घर या आस-पास के किसी बड़े व्यक्ति से पता करो – जब वे छोटे बच्चे थे तब वे क्या-क्या खेल खेलते थे?

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स्थानीय मशहूर खिलाड़ियों पर जानकारी एकत्रित करवाएँ जो बच्चों को खेलों के बारे में ज्ञान और खिलाड़ियों के प्रति सम्मान को बढ़ावा देगा।

पहेली को चित्र से जोड़ो और खेल का नाम लिखो।



रंग-बिरंगी काँच की गोली
साध निशाना जीती भोली।

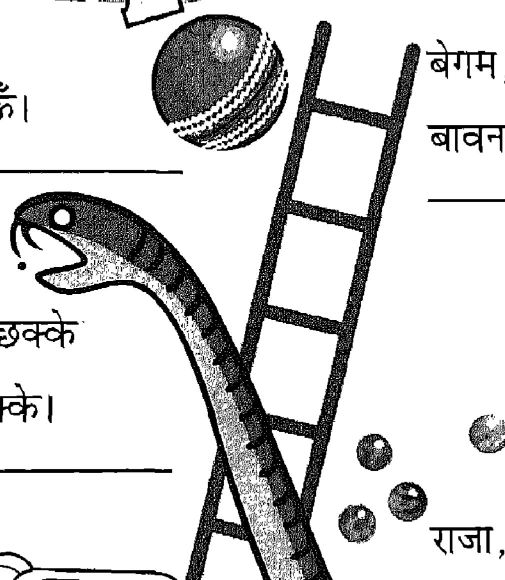
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साँप काटे तो नीचे आऊँ
सीढ़ी मिले तो झट चढ़ जाऊँ।

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बाँध गले में सूत
बिन पंख मैं उड़ जाऊँ।

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बेगम, बादशाह, इक्का, गुलाम
बावन पत्तों के खेल का नाम।

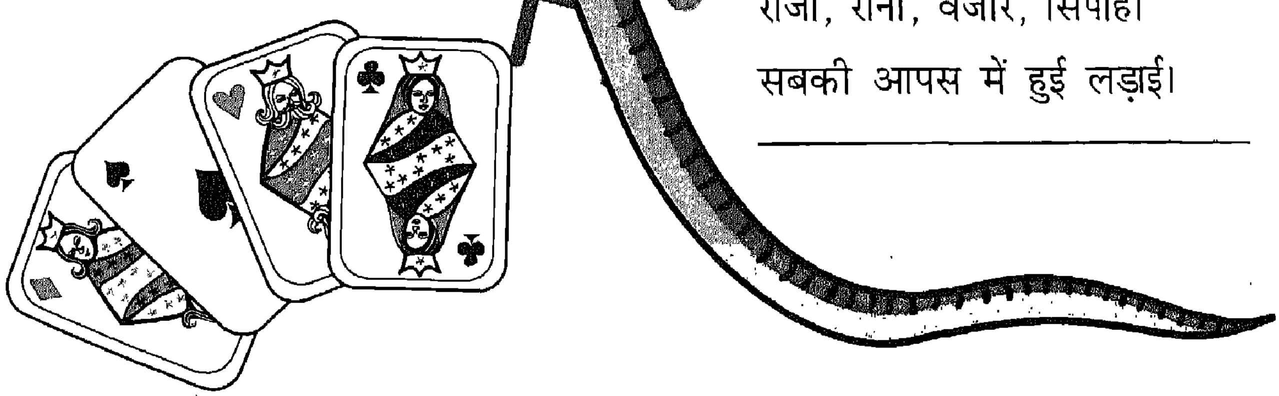
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लगा लो तुम चौके-छक्के
बना लोगे सौ रन पक्के।

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राजा, रानी, वजीर, सिपाही
सबकी आपस में हुई लड़ाई।

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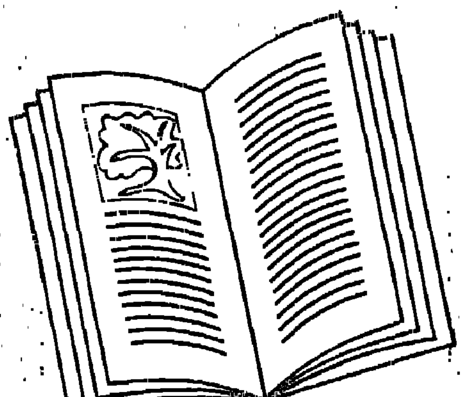
बच्चों ने कई खेल खेले होंगे, कई देखे भी होंगे। कुछ के बारे में सुना होगा, पढ़ा होगा या फिल्मों, नाटकों में देखा होगा। इन सभी को चर्चा में शामिल किया जा सकता है।

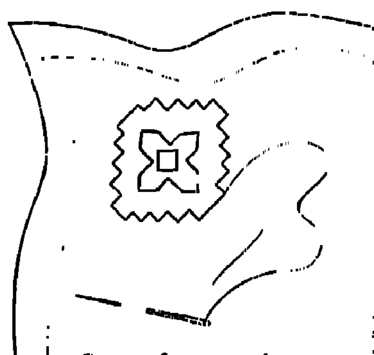
खेलने के अलावा तुम क्या-क्या करते हो?

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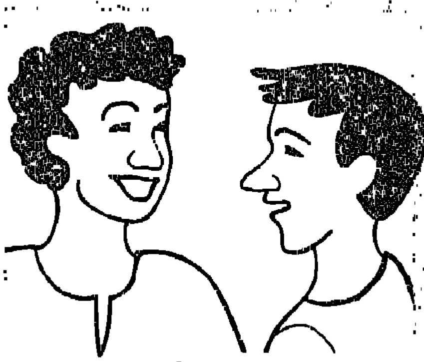
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तुम्हारे परिवार के लोग दिए गए चित्रों में से जो कुछ करते हैं उनमें रंग भरो। खाली छोड़ी हुई जगह में कुछ और भी जो वे करते हैं, उसका चित्र बनाओ और लिखो।
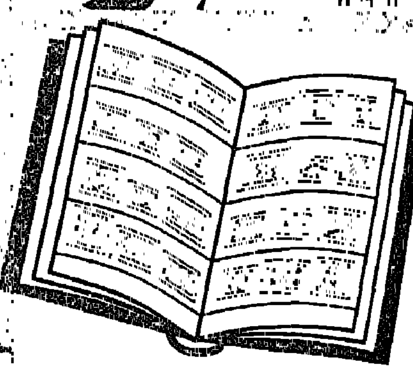

पढ़ना

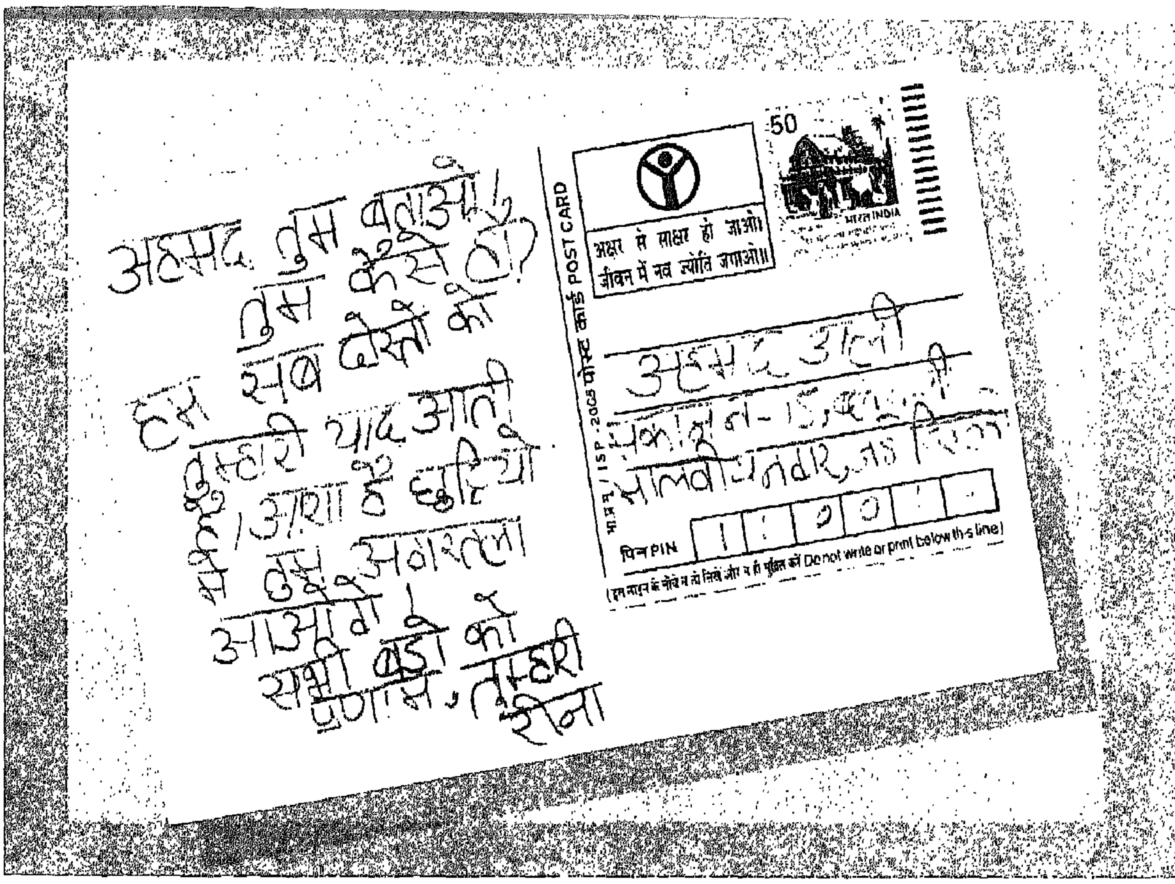

सिलाई कढ़ाई करना


नाचना


गप-शप करना


पेड़-पौधों की देखभाल


डाक-टिकट इकट्ठे करना

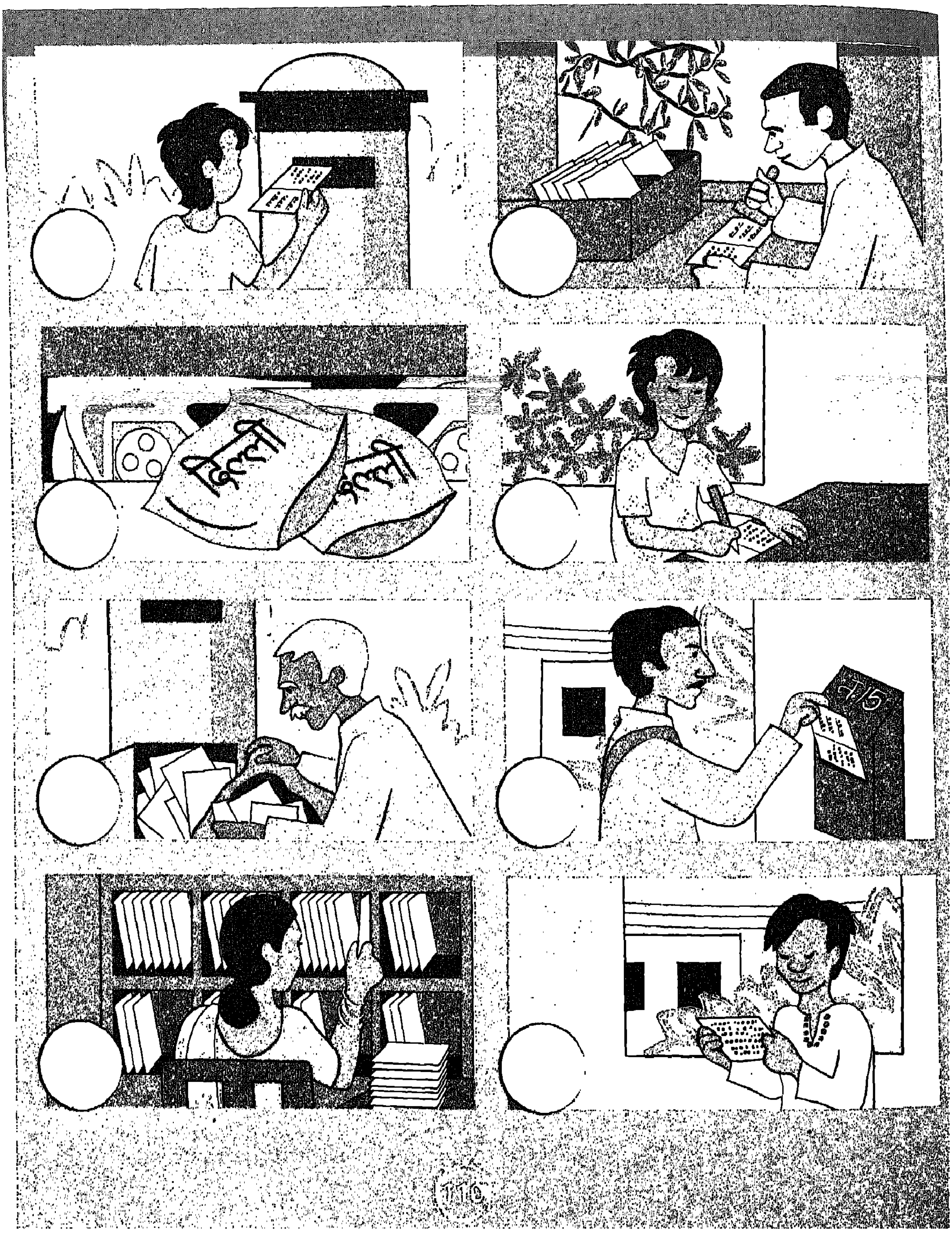


मैं हूँ एक चिट्ठी। कागज़ कलम से लिखी चिट्ठी, जो रीना ने अपने दोस्त अहमद को लिखी। मुझे पत्र-पेटी में डाला। डाकिए ने मुझे निकाला और निकालकर एक बड़े से थैले में डाला। मैं हो गई डाकिए की साइकिल पर सवार और पहुँची डाकघर। वहाँ मुझे थैले से निकाला और निकालकर एक ज़ोर का ठप्पा लगाया। ठप्पा था अगरतला का, जहाँ से मेरा सफर शुरू हुआ।

ठप्पे के बाद पहुँची मैं दूसरे बड़े थैले में। इसमें थीं अनेकों चिट्ठियाँ जो जा रही थीं दिल्ली। डाकघर की लाल गाड़ी से पहुँची मैं रेलवे स्टेशन। वहाँ मैं चढ़ी दिल्ली जानेवाली रेलगाड़ी में।

पाँच-छः दिन के लंबे सफ़र के बाद मैं दिल्ली पहुँची। वहाँ के डाकघर के पते के अनुसार फिर से हुई मेरी छँटाई और फिर लगा ठप्पा। इसके बाद डाकिए ने मुझे पहुँचा दिया अहमद के घर।

नीचे रीना की चिट्ठी का सफ़र चित्रों में दिया गया है। पर ये क्या! सारे आगे-पीछे हो गए हैं। क्रम के अनुसार चित्रों के नीचे नंबर डालो।



एक चिट्ठी रीना ने अहमद को लिखी। अब एक चिट्ठी तुम अपनी कक्षा में किसी दोस्त को लिखो। चिट्ठी के ऊपर दोस्त का नाम ज़रूर लिखना।

सबने चिट्ठी लिख दी, पर डालेंगे किस में?

चलो कक्षा के लिए एक पत्र-पेटी बनाएँ –

1. एक जूते का खाली डिब्बा लो।

2. डिब्बे पर लाल रंग करो या लाल कागज़ चिपका दो।

3. अब डिब्बे के ढक्कन को कैंची से इतना काटो कि चिट्ठी अंदर जा सके।

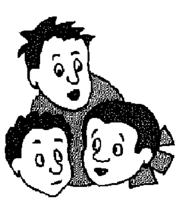
लो हो गई तैयार पत्र-पेटी।

तुम सब अपनी-अपनी चिट्ठी इसके अंदर डाल दो और इंतज़ार करो अपनी-अपनी चिट्ठियों का।

अब एक बच्चा डाकिया बने। वह पत्र-पेटी से चिट्ठियाँ निकाले और सब बच्चों को बाँटे।

अच्छा लगा दोस्त की चिट्ठी पढ़कर?

जैसे तुमने अपने दोस्त को चिट्ठी लिखी वैसे ही तुम्हारे घर पर भी रिश्तेदार और दोस्त चिट्ठियाँ भेजते होंगे। तुम घर से कुछ चिट्ठियाँ लाओ और देखो। देखा कितनी अलग-अलग प्रकार की चिट्ठियाँ होती हैं।



- तुम्हें इन चिट्ठियों में क्या अंतर दिखाई दिया?
- किन-किन चिट्ठियों पर टिकट लगे हैं?
- क्या सभी टिकट एक जैसे हैं? उनमें क्या-क्या अंतर हैं?
- क्या तुमने चिट्ठियों पर डाकघर का ठप्पा लगा देखा है?

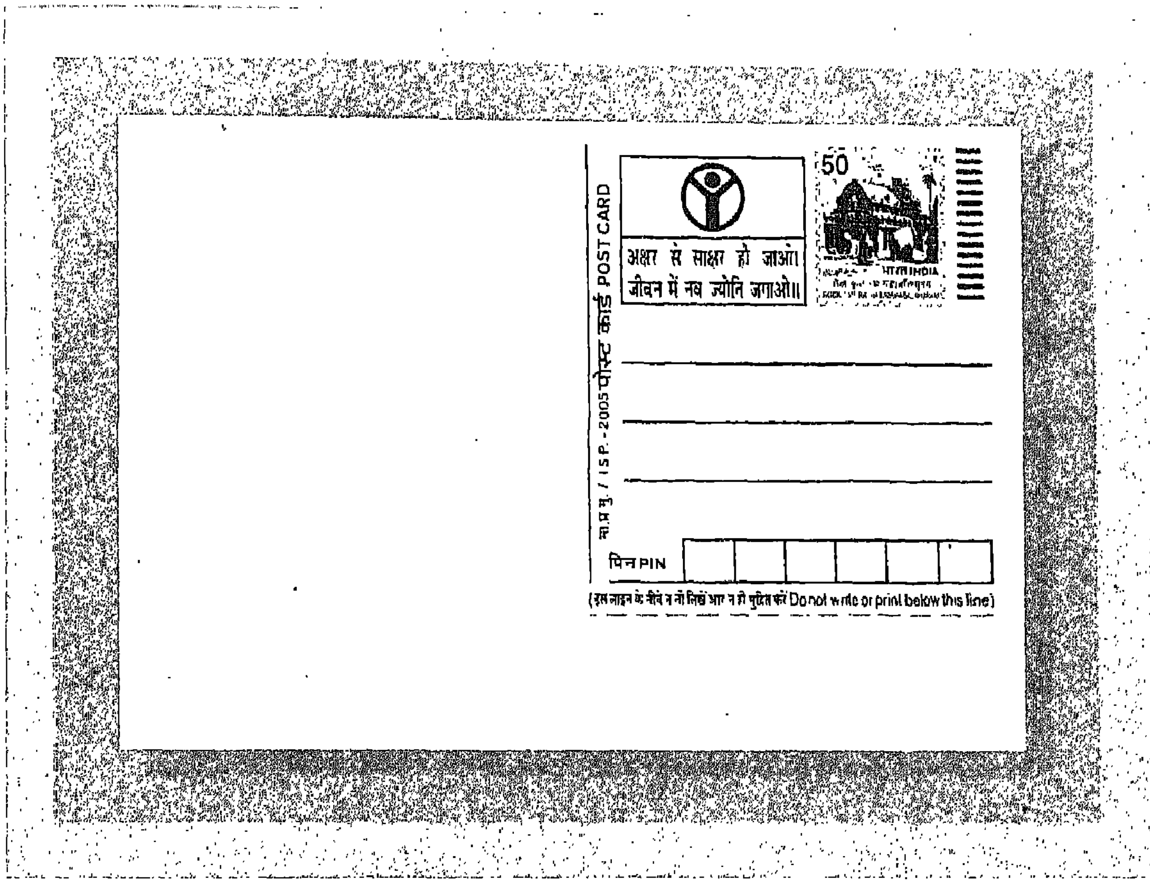
कक्षा में ही अपने मित्र को चिट्ठी लिखकर कुछ बताने में बच्चों को मज़ा आएगा तथा ये उनको पत्र-लेखन के लिए भी प्रोत्साहित करेगा। असली चिट्ठियाँ देखकर बच्चे बेहतर ढंग से समझ पाएँगें।

कुछ अलग-अलग तरह के टिकट इकट्ठे करके नीचे चिपकाओ।

तुम्हारी चिट्ठी तुम्हारे दोस्त के पास कैसे पहुँची? क्योंकि लिखा था उस पर उसका नाम, उसका पता।

पुराने ज़माने में चिट्ठियाँ कैसे पहुँचती थीं। बच्चों को बुजुर्गों से पता करने को कहें। पोस्टकार्ड पर पता लिखने में बच्चों को मदद की जरूरत पड़ सकती है।

दिए गए पोस्टकार्ड पर तुम अपना पता लिखो।



रीना की चिट्ठी तो रेलगाड़ी से दिल्ली पहुँच गई, पर जब रेलगाड़ियाँ नहीं थीं तो दूर जगहों पर चिट्ठियाँ कैसे पहुँचती थीं?

डाकघर की सैर

अगर स्कूल या घर के पास डाकघर हो तो वहाँ जाकर देखो कि चिट्ठियाँ कैसे आती-जाती हैं। वहाँ अन्य क्या-क्या काम होते हैं।

ये क्या! रज़िया और उसकी आपा चिट्ठी को लेकर क्या बातें कर रहे हैं?

पुराने जमाने के बारे में पता करने का एक महत्त्वपूर्ण स्रोत बुजुर्ग हैं। यह समझने से बच्चे बुजुर्गों से बात करने के लिए प्रेरित होंगे।



रज़िया और आपा निकल पड़ी फ़ोन करने गाँव की एक दुकान पर। आपा ने फ़ोन का नंबर लगाया। दोनों ने नानी से बातें की। दुकानदार को पैसे दिए और खुशी-खुशी घर लौट आईं।

- तुमने फ़ोन कहाँ-कहाँ देखा है?

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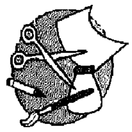
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- तुम फ़ोन पर किस-किस से बात करते हो?

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- तुम्हें चिट्ठी लिखना या फ़ोन करना – दोनों में से क्या ज़्यादा अच्छा लगता है?

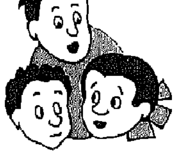
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फ़ोन भी अलग-अलग तरह के होते हैं। तुमने जो फ़ोन देखे हैं उनका चित्र बनाओ।

अपना फ़ोन बनाओ

इसके लिए चाहिए दो माचिस की खाली डिब्बियाँ या आइसक्रीम के कप और धागा। दोनों माचिस की डिब्बियों में छेद करो। एक डिब्बी के छेद में से धागा निकालकर गाँठ बाँध दो। धागे का दूसरा सिरा दूसरी डिब्बी के छेद में से निकालकर गाँठ बाँधो। बन गया तुम्हारा अपना फ़ोन। अपने एक दोस्त को फ़ोन का एक सिरा कान में लगाने को कहो और दूसरा तुम अपने मुँह पर रखो। ध्यान रहे कि धागा खिंचा रहे कहीं छुए न। शुरू करो अपनी बातें।

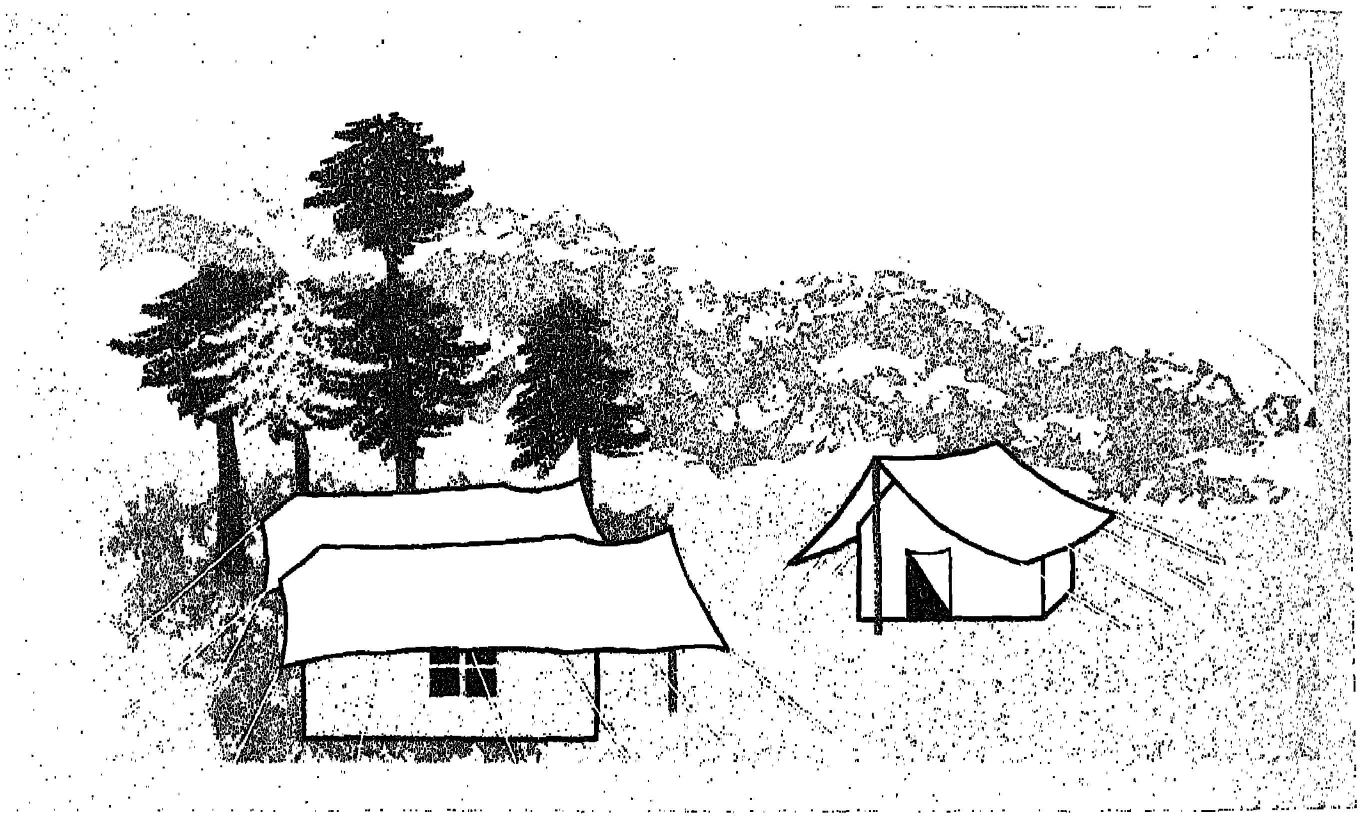


हमने चिट्ठी भी लिखी, फ़ोन भी किया। बताओ कि चिट्ठी और फ़ोन में कौन-सी बातें एक जैसी हैं और कौन-सी अलग?

स्थानीय परिवेश को देखते हुए बच्चों से संचार के अन्य माध्यम जैसे मोबाइल फोन, ई-मेल आदि पर भी बात की जा सकती है।

18 ऐसे भी होते हैं घर

मेरा नाम नसीम है। मैं श्रीनगर में रहता हूँ। कल से हमारे स्कूल में बहुत चहल-पहल है। यह पूरे सात दिनों तक रहेगी। जानते हो क्यों? हमारे स्कूल में कैंप जो लगा है। कैंप में कई जगहों से बच्चे आए हैं। मैदान में टैंट लगाकर सबके रहने का इंतज़ाम किया गया है।

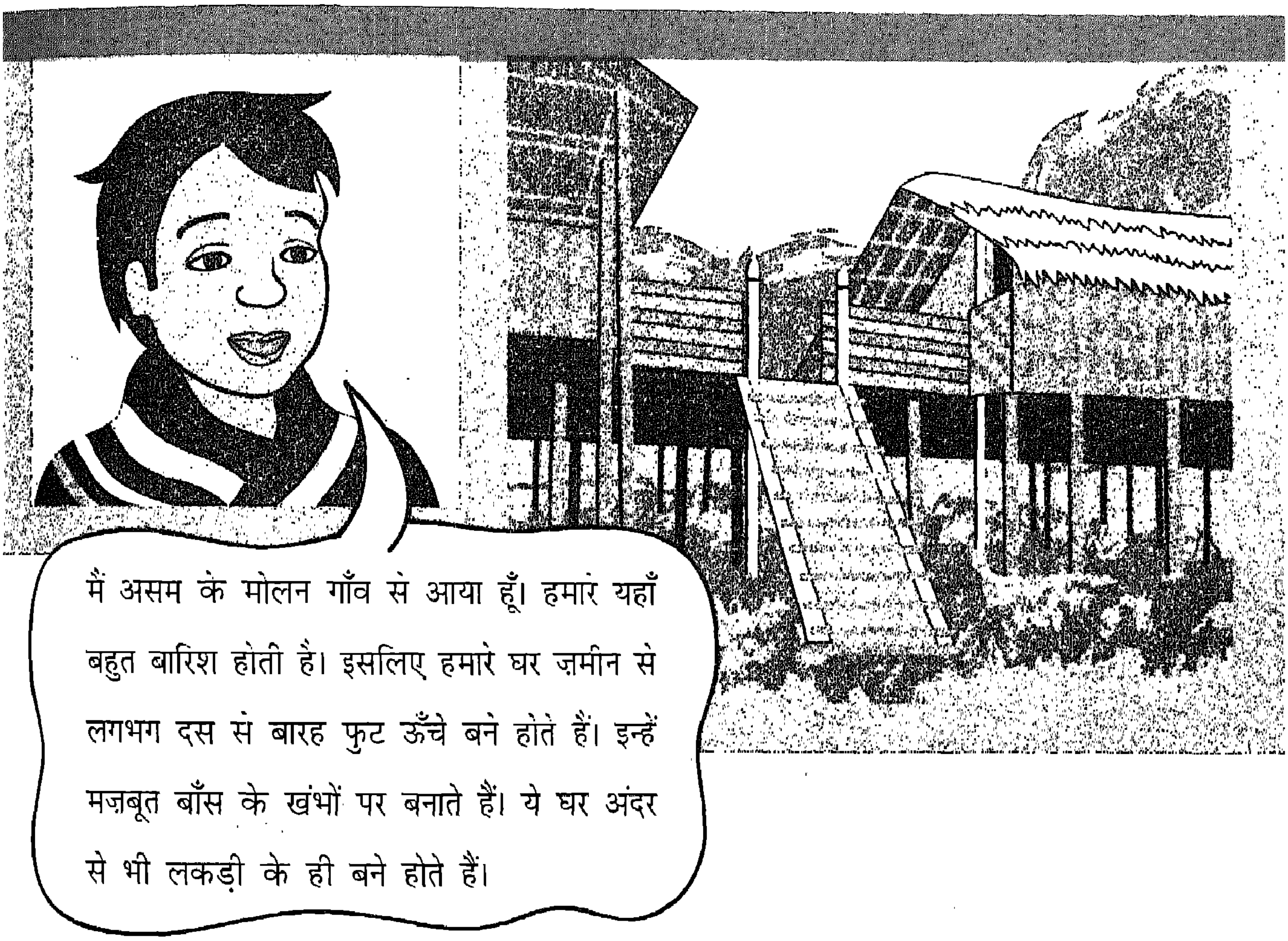


हमने स्कूल को खूब सजाया है। कुछ बच्चों ने कपड़ों की कतरनों से झालर बनाकर, उन्हें दरवाज़े पर लगाया है। कुछ ने बादाम के छिलकों से पोस्टर बनाए हैं। कहीं तो सूखे पत्तों तथा लकड़ी के बुरादे से रंगोली बनाई है।

मकानों की विविधता दिखाने के लिए कुछ जगह जैसे - असम, राजस्थान, दिल्ली, पहाड़ी इलाके का उपयोग हुआ है। इन जगहों का परिवेश समझने से बच्चे इन मकानों को समझ पाएँगे।

आज कैंप का पहला दिन है। हम सब बहुत खुश हैं। सुबह सब बच्चे इकट्ठे हुए। सब बच्चे ज़मीन पर एक गोला बना कर बैठ गए। सबने अपना-अपना परिचय दिया। सबने अपने बारे में बताया कि वे कहाँ रहते हैं, क्या खाना पसंद करते हैं। बच्चे अपने साथ अपने घर और परिवार की तस्वीरें भी लाए हैं। बारी-बारी से सब बच्चों ने अपने घरों के बारे में भी बताया। सबसे पहले भूपेन के समूह की बारी आई।

भूपेन ने अपना नाम बताया और कहा -



❊ भूपेन के यहाँ, घर बाँस के खंभों पर क्यों बनाते हैं?

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- इन मकानों की छतें कैसी हैं? इन्हें ऐसा क्यों बनाया जाता है?

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- इन मकानों में अंदर जाने का क्या तरीका है?

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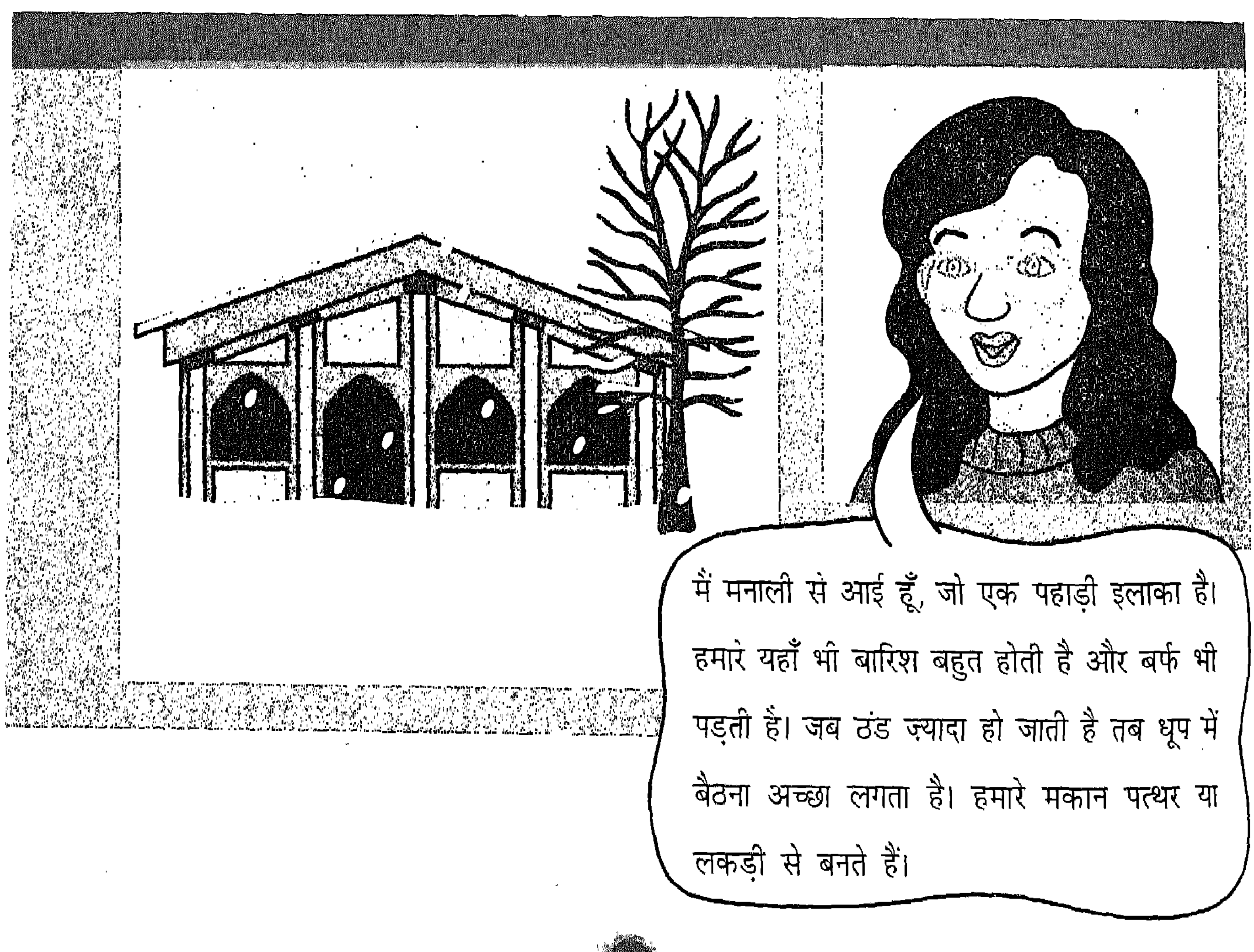
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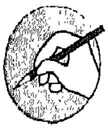
- रात के समय इन मकानों की सीढ़ी हटा देते हैं। क्यों?

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अब आई चमेली की बारी। उसने कहा –





चमेली का घर किस इलाके में है?

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चमेली और भूपेन के मकानों की छतों में क्या समानता है?

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ऐसी छतें इन इलाकों में कैसे मदद करती हैं?

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मिताली और अनुज ने बताया –

मिताली और अनुज दिल्ली से आए हैं। उन्होंने सबको दिल्ली की तस्वीरें दिखाई। एक तस्वीर में ऊँची-ऊँची इमारतें देखकर भूपेन बोला – अरे! इतने ऊँचे मकान। इनमें ऊपर तक कैसे चढ़ते हो?





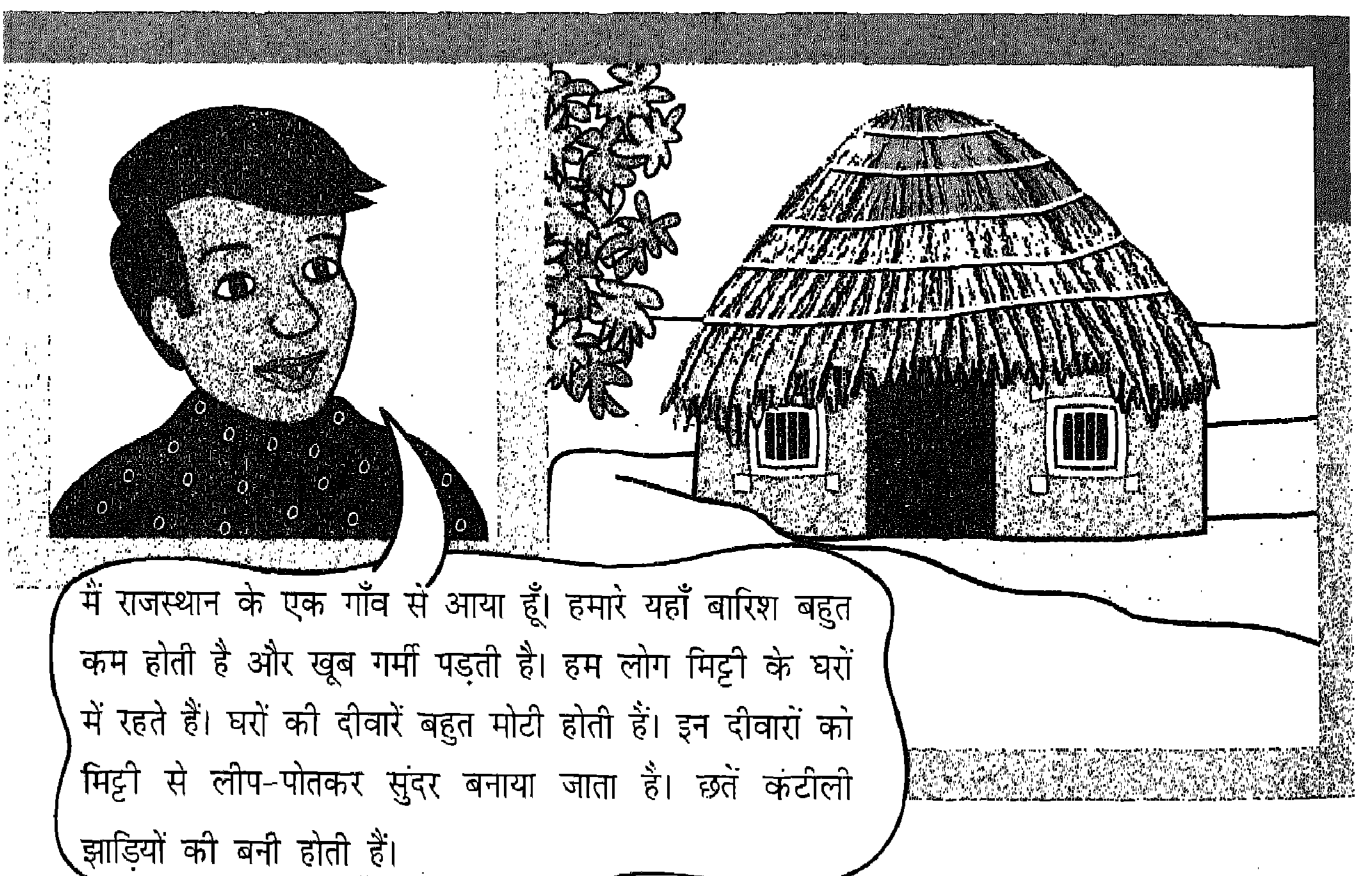
इन मकानों को देखो और पता करो कि क्या तुम्हारे यहाँ भी ऐसे मकान हैं?

बहुमंजिले मकानों में ऊपर कैसे चढ़ते होंगे?

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दिल्ली भारत की राजधानी है। दिल्ली और उसके जैसे बड़े शहरों में, गाँवों और कस्बों से लोगों को काम की तलाश में आना पड़ता है। ये लोग अक्सर शहर में ही बस जाते हैं। यहाँ रहने वाले लोग ज़्यादा हैं और जगह कम। बहुत लोगों के पास मकान होते ही नहीं। उन्हें झुग्गी-झोपड़ियों में रहना पड़ता है – और कई लोगों के पास वह भी नहीं। लोग जहाँ जगह मिले वहीं सो जाते हैं – सड़क पर, फुटपाथ पर, स्टेशन पर...। वाकई शहरों में घर की बहुत बड़ी समस्या है।

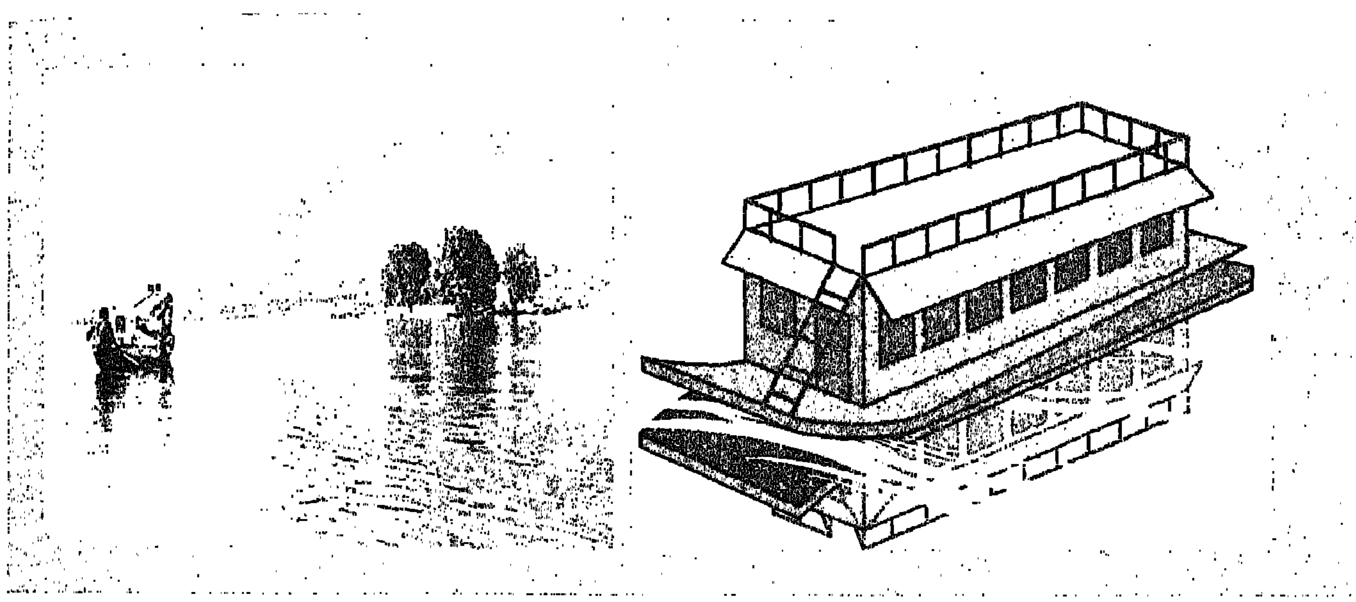
काशीराम ने बताया –



बच्चों से बेघर लोगों की मुसीबतों के बारे में संवेदनशीलता से बातचीत करने की आवश्यकता है।

इसी तरह सभी टोलियों ने अपने-अपने घरों के बारे में बताया। परिचय के बाद रंगारंग कार्यक्रम हुआ। बच्चों ने तरह-तरह के नाच किए। अपनी-अपनी भाषा में लोकगीत सुनाए। सब ने इलायची और बादाम डला हुआ कहवा (चाय) पीया। बहुत मज़ा आया।

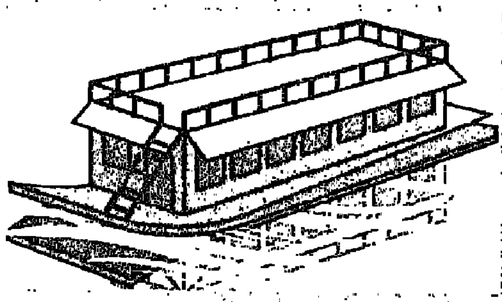
शाम को हम सब डल झील घूमने गए। वहाँ हमने एक हाउस बोट देखी। शिकारे में बैठे। कुछ बच्चों ने चप्पू भी चलाया। चारों तरफ़ नीले-नीले पहाड़ और बीच में 'चार चिनारी'।



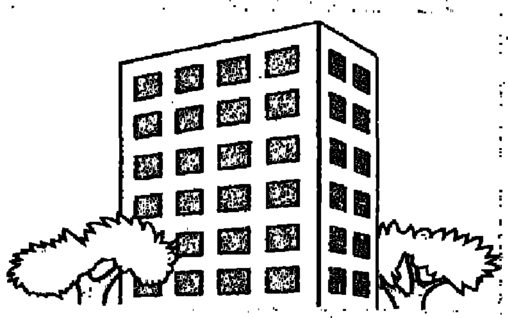
- हाउस बोट दूसरे घरों से अलग हैं। कैसे?

- क्या तुम ऐसे घर में रहना पसंद करोगे? क्यों?

चित्र देखकर मिलान करो।



झोपड़ी

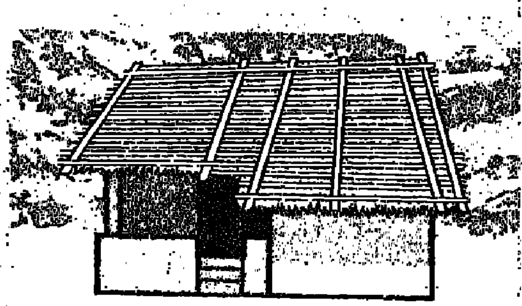


बर्फ का घर (इग्लू)

तंबू



हाउस बोट



बहुमंजिला मकान

तुम्हारा घर किन-किन चीज़ों से बना है। उन के नाम पर '✓' का निशान लगाओ।

घास	मिट्टी	लकड़ी	सीमेंट	केनवास	लोहा
☐	☐	☐	☐	☐	☐
प्लास्टिक	चूना	बाँस	ईंटें	काँच	पत्थर
☐	☐	☐	☐	☐	☐

अपने घर के आस-पास के मकानों को देखो। वे किन-किन चीज़ों से बने हैं? उन चीज़ों की सूची बनाओ।

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मकान जिन चीज़ों से बनते हैं, उन चीज़ों के नमूनों को इकट्ठा करो।

आओ ईंट बनाएँ

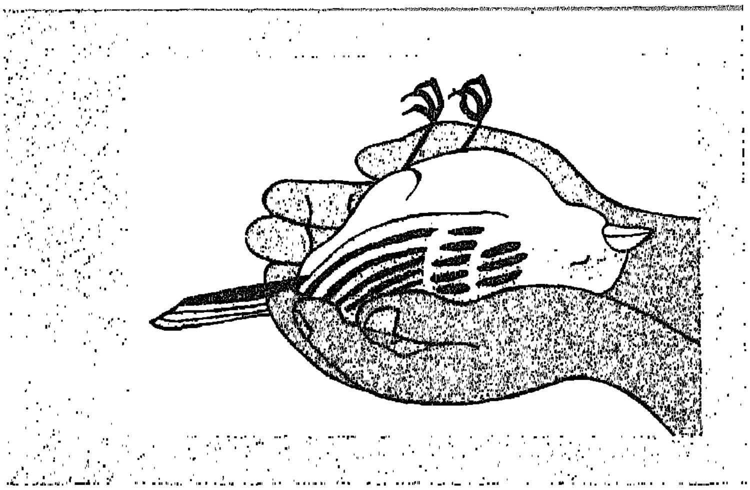
चिकनी मिट्टी को गूँध लो। खाली माचिस में दबाकर भरो। सुखाकर निकालो। तुम्हारी छोटी-सी ईंट तैयार हो गई!

अपनी ईंटों पर तरह-तरह के रंग करो। उस पर अपना नाम भी लिखो। इन सभी ईंटों को मिलाकर एक रंग-बिरंगा घर बनाओ। घर की छत को भी सजाओ।

- कई तरह के घरों के चित्र इकट्ठे करो या उनके चित्र बनाओ। चित्रों से एक सुंदर चार्ट बनाओ। कक्षा में उसे सजाओ।

मकान किन चीज़ों से बनाए जाते हैं – बच्चे अपने आस-पास उपलब्ध इन चीज़ों को इकट्ठा करके बेहतर ढंग से समझ सकेंगे।

'टक' की आवाज़ सुनकर कक्षा में बैठे सभी बच्चे चौंक गए। आवाज़ छत पर लगे पंखे से आई थी। कल्याणी चिल्लाई—देखो-देखो! उस कोने में देखो। चिड़िया पंखे से कट गई। पीटर झट से उठा और चिड़िया को उठा लाया। चिड़िया तड़प रही थी।



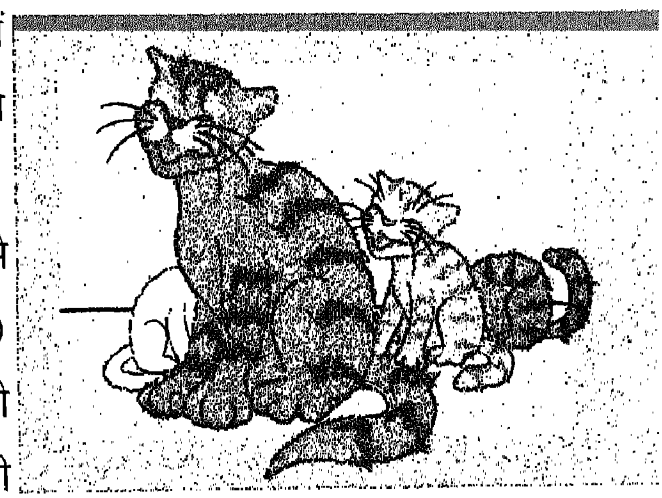
नवजोत और अली जल्दी से जाकर एक कटोरी में पानी ले आए। पीटर ने चिड़िया को प्यार से सहलाया। पानी की कटोरी चिड़िया की चोंच के पास लगाई। चिड़िया ने थोड़ा पानी पिया। पानी पीकर वह धीरे-धीरे अपने पंख फड़फड़ाने लगी। नवजोत ने सभी बच्चों को पीछे हटने के लिए कहा। उन्होंने देखा कि चिड़िया धीरे-धीरे उड़ने की कोशिश कर रही है। तभी फुर्र... की आवाज़ के साथ चिड़िया बाहर उड़ गई।



अगले दिन बच्चों ने देखा एक चिड़िया कमरे में चक्कर लगा रही है। बच्चों ने यह पहचानने की कोशिश की कि क्या वह पिछले दिन वाली चिड़िया थी। उन्हें लगा कि वही है। उन्होंने जल्दी से पंखा बंद कर दिया और ताली बजाने लगे।

वाक्यों को सही क्रम में डालो –

- पीटर ने चिड़िया को प्यार से सहलाया। ☐
- बच्चों ने देखा एक चिड़िया उनकी कक्षा में चक्कर लगा रही है। ☐
- नवज़ोत और अली जल्दी से जाकर एक कटोरी में पानी ले आए। ☐
- फुर्र... की आवाज़ के साथ चिड़िया कक्षा से बाहर उड़ गई। ☐
- चिड़िया पंखे से कट गई। ☐



शंकर बहुत खुश था। उसके घर के आँगन में बिल्ली ने चार बच्चे जो दिए थे। वह अपना खाली समय वहीं बिताने लगा।

एक सुबह बिल्ली के रोने की आवाज़ से उसकी नींद खुली। (बोलो, बिल्ली कैसे रोती है?) वह भागा आँगन की ओर। देखा तो बिल्ली अपने तीन बच्चों को साथ चिपका कर रो रही थी। एक बच्चा गायब था। बाहर जाकर देखा तो मालिनी बिल्ली के बच्चे को सहला रही थी।

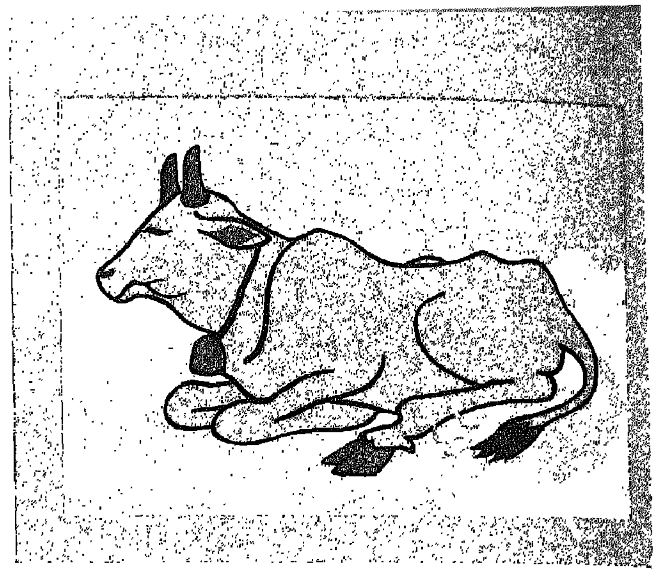
शंकर ने मालिनी को घर के आँगन में बुलाया। मालिनी ने बिल्ली को रोते हुए देखा।

सोचो, मालिनी ने क्या किया होगा?

जानवरों की भावनाओं के बारे में चर्चा करने से बच्चे जानवरों के प्रति संवेदनशील हो सकते हैं।

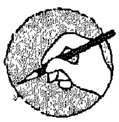
भोली, मीनू की गाय है। मीनू रोज़ सुबह भोली को मैदान में चराने ले जाती है।

एक दिन तेज़ी से आते स्कूटर से भोली के पाँव में चोट लग गई। चोट से खून निकल रहा था।





अब मीनू के घर के लोग क्या करेंगे?



चंदू धोबी अपने गधे का बहुत ध्यान रखता है। गधा भी तो उसके बहुत सारे काम करता है।

चित्रों को देखकर लिखो कि चंदू अपने गधे के लिए क्या-क्या करता है?



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❋ क्या तुम्हारे घर में या पड़ोस में किसी के यहाँ कोई पालतू जानवर है? कौन-सा?

❋ क्या तुम उसे किसी प्यार के नाम से पुकारते हो? किस नाम से?

❋ तुम क्या करते हो जब तुम्हारे पालतू जानवर को –

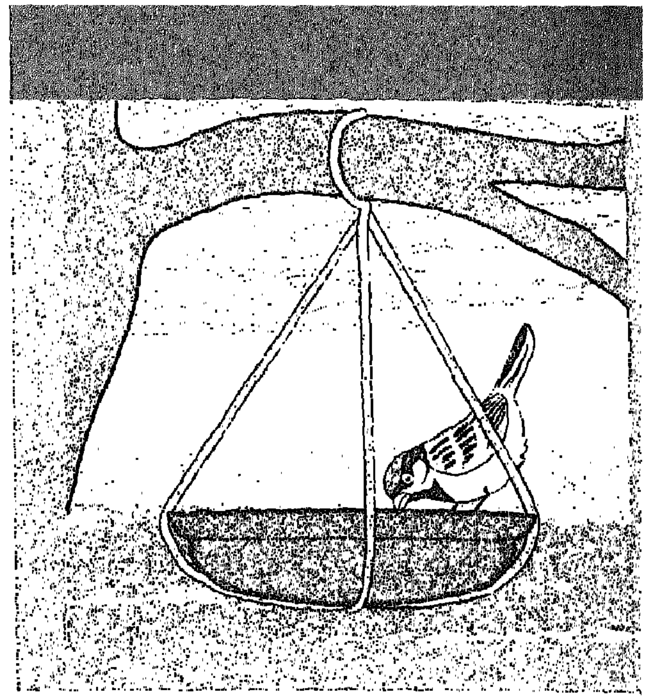
- भूख लगती है ______
- गर्मी या ठंड लगती है ______
- कोई परेशान करता है ______
- चोट लगती है ______

❋ हम कुछ जानवरों को पालते हैं। उनकी देखभाल भी करते हैं। तालिका में कुछ जानवरों के नाम हैं, जिन्हें पाला जाता है। तालिका को पूरा करो।

जानवर का नाम	इन्हें क्यों पालते है
कुत्ता	
	दूध देती है
	गाड़ी खींचता है
बैल	
मुर्गी	
मछली	
	प्यारा या प्यारी लगती है
मधुमक्खी	

हम जानवरों को पालते हैं तथा उनकी देखभाल भी करते हैं – यह संबंध समझने से बच्चों को उनके परिवेश में जीवों की आपसी निर्भरता समझने में आसानी होगी।

पक्षियों का प्याऊ



मिट्टी का एक चौड़े मुँह का बर्तन लो। बर्तन को रस्सी से बाँधकर लटकाओ, जैसा चित्र में दिखाया है। अब उस बर्तन में पानी डालकर उसे किसी पेड़ की शाखा पर या घर के बाहर किसी खूँटी पर टाँग दो। उसमें रोज़ पानी भरो। देखो, पानी पीने के लिए कौन-कौन से पक्षी वहाँ आते हैं?

- पानी की जरूरत हमें भी है और जानवरों को भी। ऐसी ही कुछ और चीज़ें हैं जिन्हें हम और जानवर दोनों इस्तेमाल करते हैं। ऐसी किन्हीं तीन चीज़ों के नाम लिखो।

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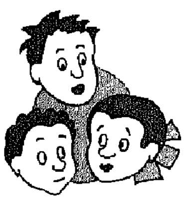
तुमने शायद भोजन भी अपनी सूची में शामिल किया होगा।

तुम जानते ही हो हमारा भोजन कितनी अलग-अलग तरह का है। इसी तरह जानवरों का भोजन भी अलग-अलग तरह का होता है।

- क्या तुमने कभी किसी जानवर को कुछ खिलाया है या किसी और को कुछ खिलाते हुए देखा है? यदि हाँ, तो तालिका में लिखो।

बच्चों को पक्षियों का प्याऊ बनाने में मदद करें। इसे बाहर खुले में रखवाएँ जिससे बच्चे पक्षियों को नज़दीक से देखें और उनके बारे में बहुत-सी बातें जानें।

किस जानवर को खिलाया	क्या खिलाया

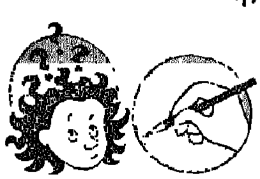


* तुम इन जानवरों को खाना क्यों खिलाते हो?
* किस जानवर को सबसे ज़्यादा बच्चों ने खाना खिलाया है?
* उसे क्या-क्या खिलाया?



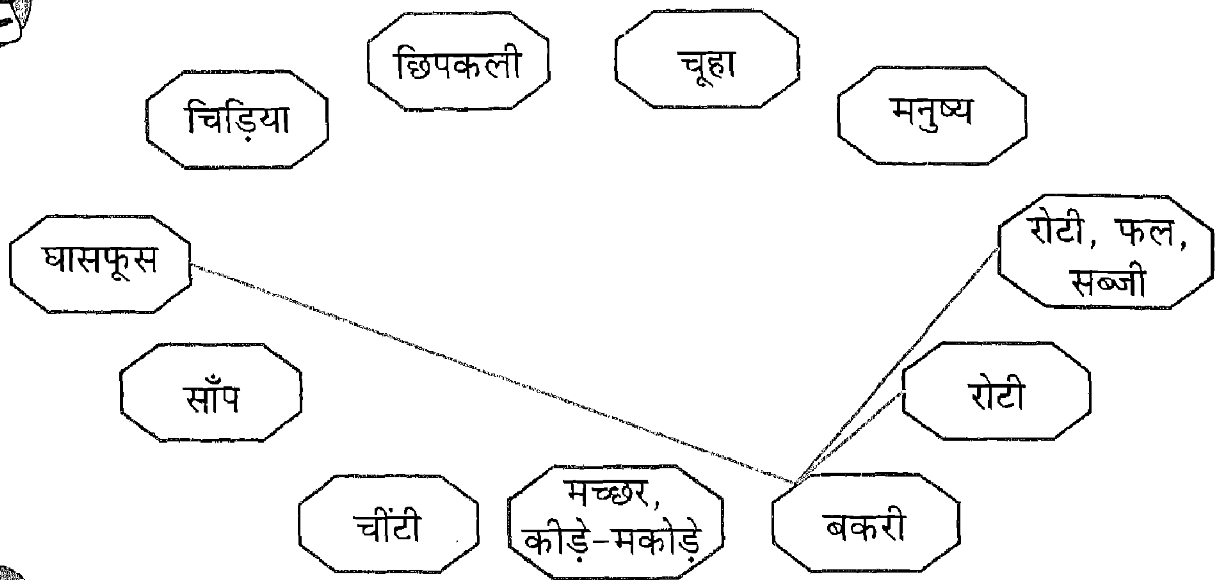
देखो, क्या तुम्हारी तालिका में इनके भी नाम हैं? पता करो ये क्या खाते हैं?

चूहा, कॉकरोच, छछुंदर, मकड़ी, छिपकली,
कौआ, गिलहरी, बंदर, सूअर



सोचो, क्या कभी किसी जानवर ने तुम्हारी मर्ज़ी के बिना तुम्हारा खाना खाया है? कैसे?

कौन क्या खाता है? उसे लाइन खींचकर मिलाओ। एक उदाहरण दिया है।



तालिका में जानवरों के नाम लिखो।

ऐसे जानवर जिन्हें तुमने छुआ है	ऐसे जानवर जिन्हें तुमने छुआ नहीं है पर छू सकते हो	ऐसे जानवर जिन्हें तुम छू नहीं सकते
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तुमने देखा कि कुछ जानवरों को हम छू सकते हैं। ये अधिकतर हमारे घरों में और आस-पास रहते हैं। इनमें से कुछ हमारी मदद करते हैं।

कुछ जानवरों के पास हम नहीं जाते। डर लगता है कहीं काट न लें, नुकसान न पहुँचाएँ या खा ही न जाएँ!

बच्चों से यह चर्चा की जा सकती है कि पशु-पक्षियों को छूने का अर्थ है उन्हें प्यार से सहलाना न कि उन्हें सताना। अगले पृष्ठ पर चित्र द्वारा दिखाई गई कहानी प्रकृति में संतुलन को दर्शाती है। बच्चों को यह बात सहज और सरल तरीके से स्पष्ट करना ज़रूरी है।

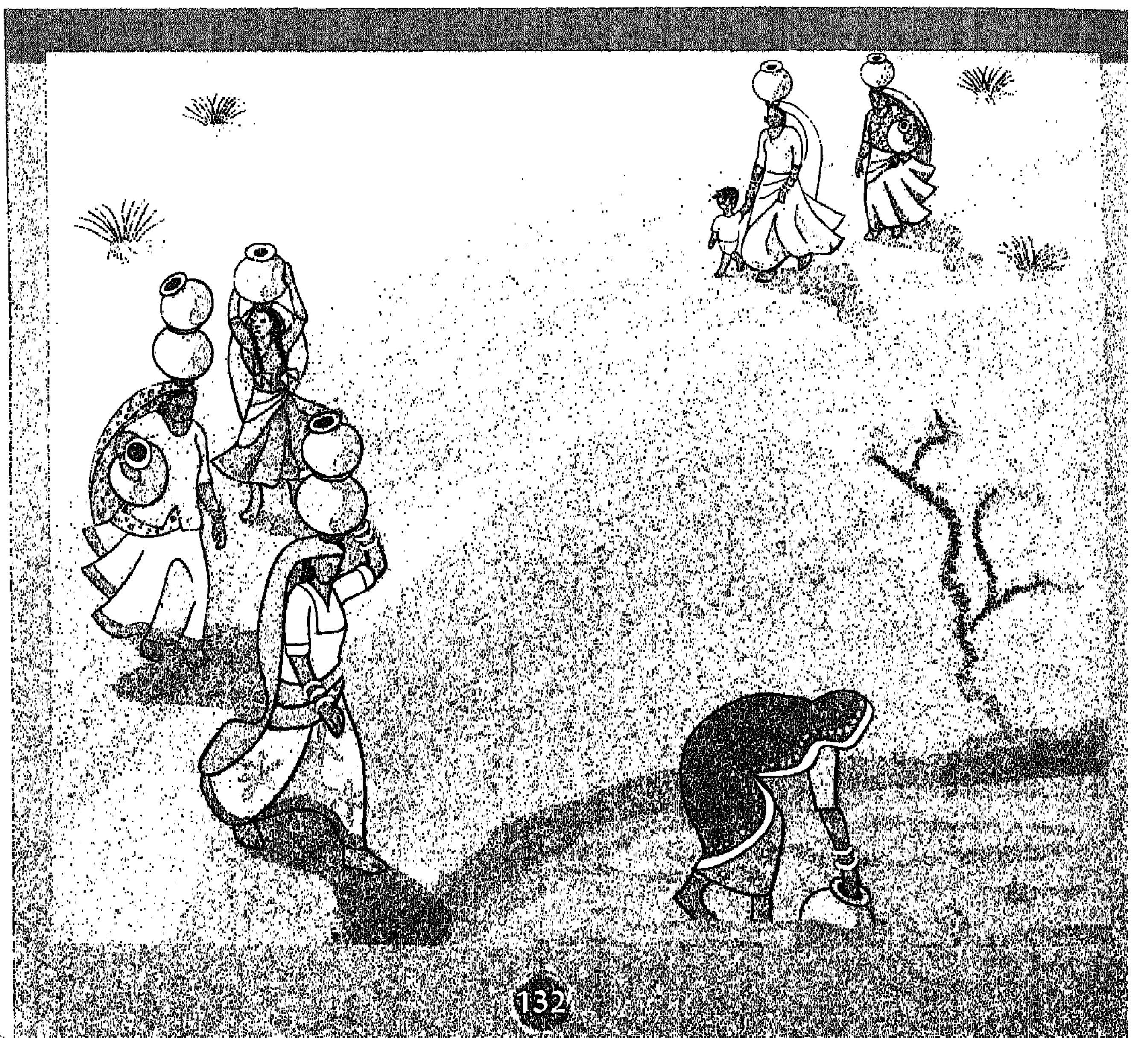


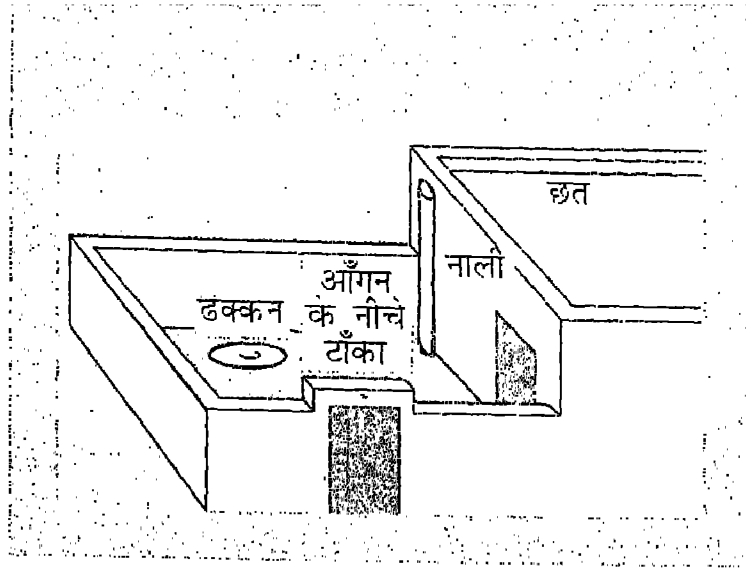
रानी के बाग में माली आम के टोकरे लाए हैं
इतने सारे आम, बहुत खूब!
महारानी जी, अगर पक्षी न खाते तो आम इससे दुगुने होते।
क्या कहा? पक्षी आम खा गए? तुमने पक्षियों को बाग में क्यों आने दिया?
गलती हो गई महारानी जी। अब किसी पक्षी को नहीं आने देंगे।
अगले साल
पहले से भी कम आम! पक्षियों को बाग में आने से रोका क्यों नहीं?
रोका था महारानी जी। एक भी पक्षी नहीं आने दिया पर इस बार तो फलों को कीड़ लग गए।
पक्षी होते तो कीड़ों को खा लेते और इतने फल खराब नहीं होते।

बूँद-बूँद से

माधो राजस्थान के बज्जू गाँव में रहता है। गाँव कहाँ? देखो तो चारों ओर रेत ही रेत दिखाई देती है। जब कभी रेत नहीं उड़ती, तब कुछ घर दिख जाते हैं।

माधो के घर में सब परेशान हैं। वैसे ही हर साल गर्मियों में पानी की बहुत कमी होती है। इस साल तो बिल्कुल ही बारिश नहीं हुई। अब उसकी माँ और बहन को और भी दूर जाना पड़ता है, पानी लाने के लिए। पास वाली बावड़ी सूख जो गई है! हर रोज़ चार घड़े पानी जुटाने में ही कई घंटे निकल जाते हैं। गर्म रेत में चल-चल कर उनके पैर तो जलते ही हैं, छाले भी पड़ जाते हैं।





गाँव में खुशी की लहर तब उठती है, जब कभी रेल से पानी आता है। माधो के पिताजी ऊँट-गाड़ी में पानी लाने जाते हैं, पर ऐसा मौका अक्सर नहीं आता। लोग पानी का इंतज़ार करते ही रह जाते हैं।

कुछ लोग बारिश का पानी इकट्ठा करते हैं। यह खास तरह से किया जाता है – टाँका बना कर। क्या तुम जानते हो टाँका क्या होता है? और इसे कैसे बनाते हैं?

आँगन में गड्ढा बना कर उसे पक्का करके टाँका बनाते हैं। टाँके को ढक्कन से बंद रखते हैं। टाँके के लिए घर की छत को कुछ ढलवा बना देते हैं, जिससे छत पर गिरा बारिश का पानी नाली के द्वारा नीचे टाँके में इकट्ठा हो सके। छत की नाली पर जाली लगा देते हैं जिससे कूड़ा-कचरा टाँके में न जा सके।

यह पानी, साफ़ करके, पीने के काम में लाया जाता है। कभी-कभी गाँव के एक टाँके से माधो को भी पानी लेने देते हैं।



सोचो! पानी की कमी से लोगों को क्या-क्या परेशानी होती होगीं?



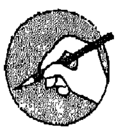
- माधो के गाँव के लोग पीने का पानी कहाँ से लाते हैं?
- माधो के घर में पानी भरकर कौन लाता है?
- टाँके का पानी ज़्यादातर पीने के काम में ही आता है। क्यों?
- अब तुम बताओ, क्या तुम्हारे घर में भी बारिश का पानी इकट्ठा किया जाता है? यदि हाँ, तो कैसे?
- क्या पानी को इकट्ठा करने का कोई और तरीका भी हो सकता है?

अगर पानी इकट्ठा करने के स्थानीय तरीकों पर बच्चे अपने अनुभव बाँटें तो किताबी ज्ञान को जीवन के अनुभवों से जोड़ पाएँगे।

माधो की तरह सोनल के घर में भी पानी की किल्लत रहती है। सोनल भावनगर शहर में रहती है। नल में रोज़ केवल आधे घंटे पानी आता है। मोहल्ले भर के लोग एक ही नल पर, सोचो कितना बुरा हाल होता होगा।

पर सोनल पानी भरने के लिए डटी रहती है। जब मौका मिलता है, बूँद-बूँद कर के भी बाल्टी भर लेती है।

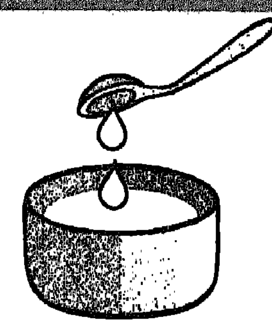
आओ पता लगाएँ कि कितनी बूँदों से भरती है कटोरी, या फिर बाल्टी।



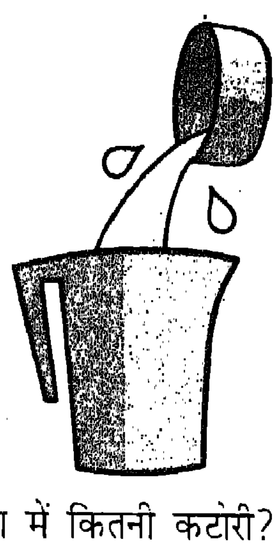
चित्र में दिखाए तरीके से प्रयोग करो, पता लगाओ और खाली डिब्बे में लिखो।



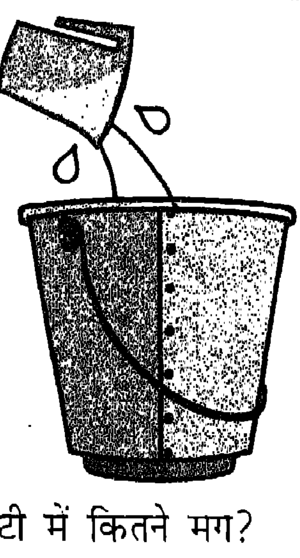
1. एक चम्मच में कितनी बूँदे? [ ]



2. एक कटोरी में कितने चम्मच? [ ]



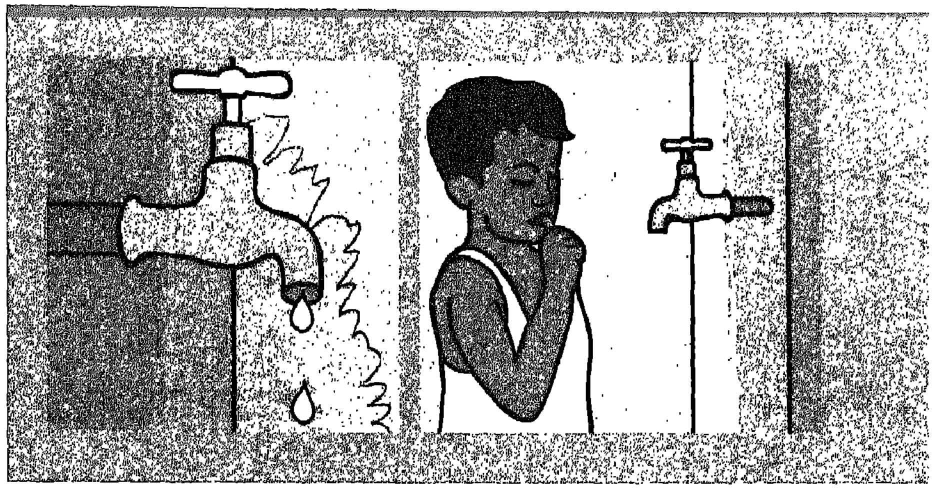
3. एक मग में कितनी कटोरी? [ ]



4. एक बाल्टी में कितने मग? [ ]

देखा, बूँद-बूँद से मिला कितना पानी!

अगर नल से बूँद-बूँद पानी टपकता रहेगा तो कितना पानी बरबाद होगा। इन चित्रों में ऐसा ही कुछ हो रहा है।



पानी की बचत के लिए तुम क्या कुछ सोच सकते हो? तुम्हारा सुझाव लिखो।

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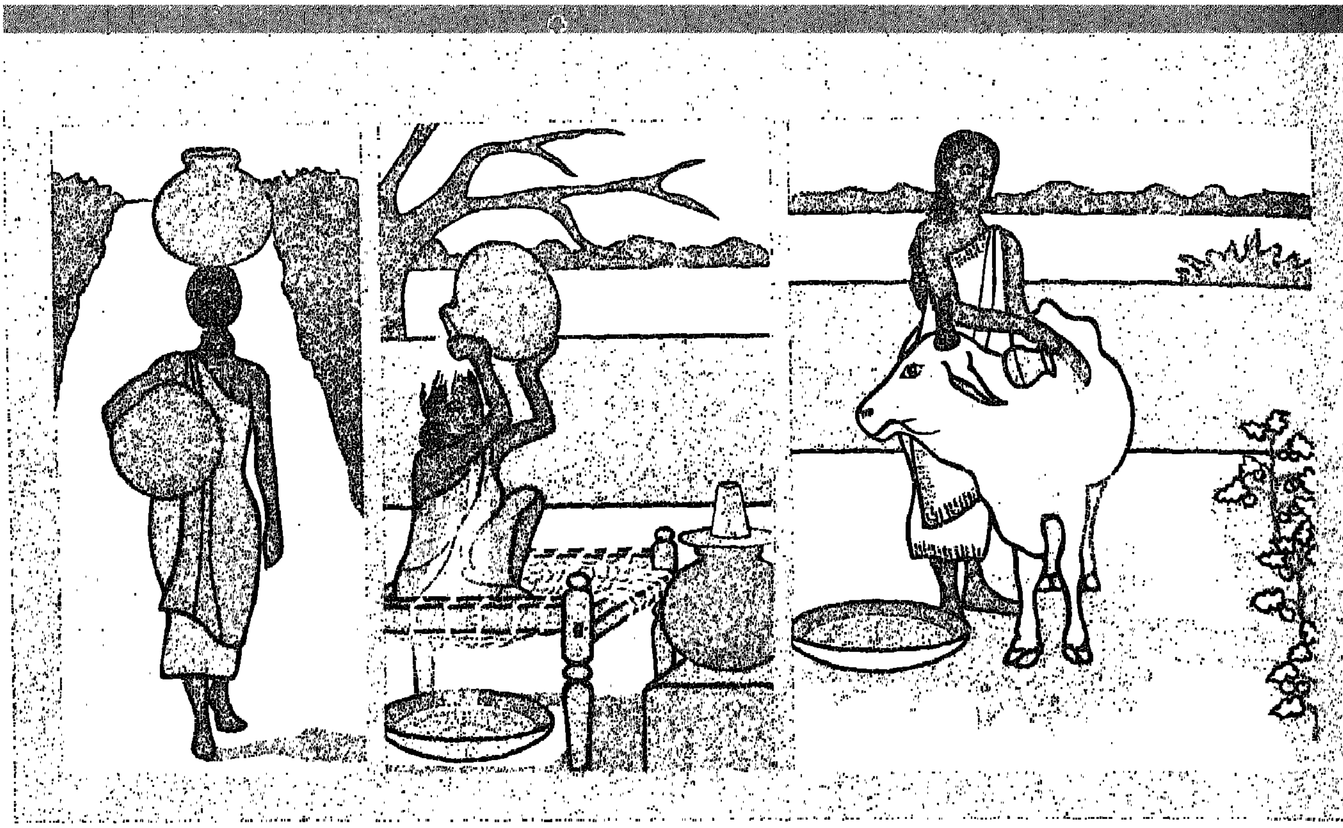
क्या तुमने घर में, स्कूल में या रास्ते में पानी को बेकार बहते देखा है? कहाँ?

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चित्र देखो और चर्चा करो – क्या एक बार पानी से काम करने के बाद उसी पानी से कुछ और काम कर सकते हैं?

जिस जगह पर पानी की किल्लत होती है वहाँ लोग पानी की बचत करने व उसके दुबारा इस्तेमाल के कई तरीके अपनाते हैं। ऐसा वह लोग मज़बूरी में करते हैं। इस बात को समझकर बच्चे अपने जीवन में पानी की बचत के कुछ उपाय अपनाएँ तो 'पानी सबका सांझा है' – यह बात वे समझ पाएँगें।



अलग-अलग रंगों से लाइनें खींचकर दिखाओ, किस काम के बाद क्या काम करोगे, जिससे वही पानी बार-बार इस्तेमाल हो सके। एक उदाहरण नीचे दिया गया है।

हाथ मुँह धोना	कपड़े धोना	फल-सब्ज़ी धोना
पोंछा लगाना	पौधों में डालना	शौचालय में डालना

तुमने पानी के बार-बार इस्तेमाल के कुछ तरीके सुझाए। यह तरीके लोग ज़्यादातर मजबूरी में ही अपनाते हैं, जहाँ पानी की बहुत कमी होती है। जानते हो पानी की कमी इसलिए भी होती है क्योंकि कुछ लोग पानी बेकार करते हैं। सोचो कितना अच्छा हो अगर सभी को पानी मिले!

इस्तेमाल किए हुए पानी के पुन: उपयोग पर चर्चा करें, ये पानी के बचाव के महत्त्व को समझने में सहायक होगी। इस बारे में बच्चों के सुझाव सुनना और इन सुझावों को जीवन में अपनाने के लिए प्रेरित करना उपयोगी रहेगा।

बोलो भाई कितने?

आओ, सब मिलकर एक खेल खेलें। इस खेल को तो तुम ज़रूर जानते होगे। सब बच्चे एक गोले में खड़े हो जाओ।

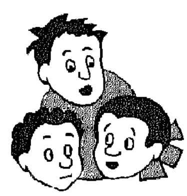
एक बच्ची गोले के बीच खड़े होकर कोई ताल बजाए। जब तक ताल बजता रहे तब तक सब गोले में भागते रहो।

ताल बजाने वाली बच्ची अचानक ताल रोककर कोई भी छोटी संख्या जैसे– 'पाँच', 'चार' या 'दो', ज़ोर से पुकारे।

ताल रुकने पर, जितनी संख्या पुकारी गई हो, उतनी ही संख्या की टोलियों में बँट जाओ।

जो बच्चे किसी भी गुट में नहीं जुड़ पाते, वे खेल से बाहर हो जाएँ।

जब तक केवल दो बच्चे गोले में न रह जाएँ, यह खेल खेलते रहो।

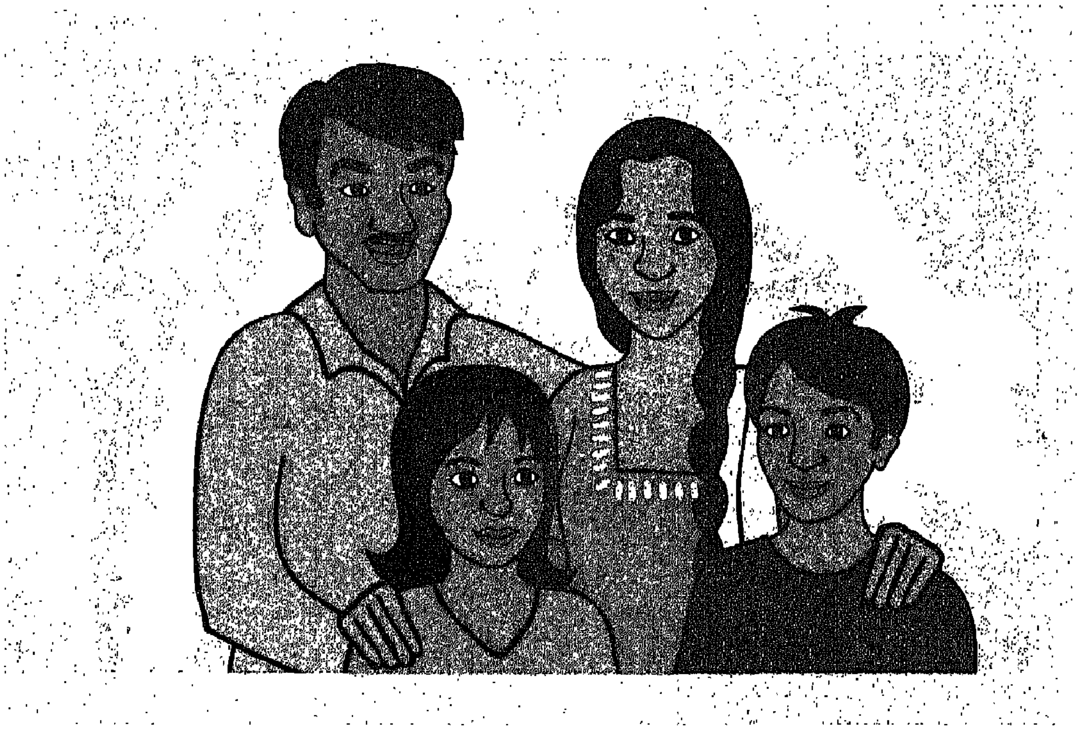


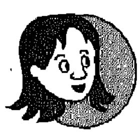
आओ, अब खेल के बारे में कुछ बातें करें

- जब तुम सही संख्या के गुट में शामिल हुए तो तुम्हें कैसा लगा? क्यों?
- अगर तुम किसी गुट में शामिल न हो पाए तब तुम्हें कैसा लगा? क्यों?
- क्या तुम्हें लोगों के साथ रहना पसंद है?
- तुम किन-किन के साथ रहना पसंद करते हो?
- अगर तुम्हें हमेशा अकेले ही रहना पड़े तो तुम्हें कैसे लगेगा?

'बोलो भाई कितने' खेल में ताल बजाने और संख्या पुकारने का काम कोई भी कर सकता है। बच्चों की संख्या के अनुसार पुकारी जाने वाली संख्या कम या ज़्यादा की जा सकती है।

हम सब अकेले न रह कर और लोगों के साथ रहना पसंद करते हैं। हम सब किसी न किसी गुट में जुड़कर जीते हैं। चलो देखते हैं एक ऐसे गुट को – गुरलीन, नागराजन और उनके बच्चे तान्या और समर।





ये लोग एक-दूसरे से कैसे जुड़े हैं?

जो चित्र तुमने देखा उसमें दिखाए गए लोग एक परिवार के हैं। ऐसे परिवार के चित्र या फोटो हम कई बार देखते हैं। कहाँ-कहाँ देखते हैं हम ऐसा परिवार? क्या सभी परिवार ऐसे ही होते हैं? आओ! अब कुछ परिवारों के बारे में पढ़ें।

सीताम्मा

सीताम्मा एक छोटे शहर गुंटूर में पुश्तैनी मकान में रहती है। मकान में नीचे दादा, दादी, छोटे चाचा और बुआ रहते हैं। पहली मंजिल के एक हिस्से में सीताम्मा अपने पिताजी, माँ और छोटी बहन गीताम्मा के साथ रहती है। दूसरे हिस्से में ताऊजी और उनके तीनों बच्चे रहते हैं। कुछ ही महीनों पहले उसकी ताईजी की मौत हो गई थी।

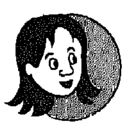
बच्चों के स्वयं के परिवार के बारे में पाठ चार में हुई चर्चा को ध्यान में रखना अच्छा होगा। कक्षा में मौजूद बच्चों के परिवारों में विविधता से पाठ की शुरुआत हो सकती है।

उसके बड़े चाचा और नई चाची अलग बरसाती के एक कमरे में रहते हैं। उनकी नई-नई शादी हुई है।



रात के खाने के पहले सीताम्मा की माँ सब बच्चों को पढ़ाई करवाती है।

सब का खाना नीचे रसोई में इकट्ठा बनता है। कोशिश होती है कि रात को सब मिलकर खाएँ। आजकल रात को ताऊजी की छोटी लड़की, सीताम्मा की माँ के पास ही सोती है। सुबह सीताम्मा उसे स्कूल के लिए तैयार करती है।



- सीताम्मा के परिवार में कौन-कौन हैं?
- इन अलग-अलग लोगों का आपस में कैसा रिश्ता है?
- इस परिवार में पिछले साल में क्या-क्या बदलाव आए हैं?

तारा

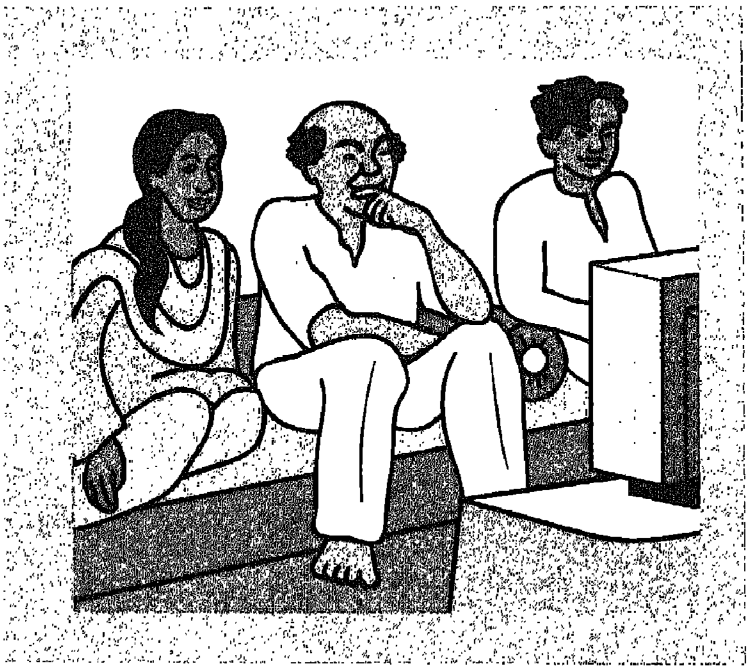
तारा अपनी अम्मा और नाना के साथ चैन्नई में रहती है। उसकी अम्मा मीनाक्षी ने शादी नहीं की है और तारा को गोद लिया है। मीनाक्षी सुबह ऑफिस जाती है और शाम को घर आती है। स्कूल से लौटने के बाद तारा की देखभाल उसके नाना जी करते हैं। वे ही उसे खाना खिलाते हैं, स्कूल का काम करने में मदद करते हैं। उसके साथ खेलते भी हैं। छुट्टी के दिनों में तीनों दूर घूमने निकल जाते हैं, खूब मज़े करते हैं। कभी-कभी तारा की मौसी, मौसा



और उनके बच्चे भी आ जाते हैं। तब वे सब मिलकर खूब खेलते हैं और गप-शप करते हैं।

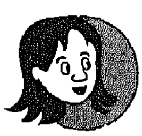


- ❊ तारा की देखभाल कौन करता है? कैसे?
- ❊ परिवार के लोग मिलकर क्या-क्या करते हैं?



सारा और हबीब

सारा और हबीब एक शहर में रहते हैं। दोनों नौकरी करते हैं। हबीब सरकारी दफ़्तर में क्लर्क है और सारा स्कूल में पढ़ाती है। हबीब के अब्बू रिटायर हो चुके हैं और उनके साथ रहते हैं। शाम को तीनों साथ बैठकर टी.वी. देखते हैं या ताश खेलते हैं। अब्बू को सब के साथ टी.वी. देखने में मज़ा आता है – देखने के साथ-साथ बहस जो होती है। छुट्टी के दिन पड़ोस के बच्चे उनके घर में खूब धमाल मचाते हैं। सब साथ मिलकर मज़े करते हैं - कभी खेल-कूद कर, कभी घूमने जाकर, कभी नाटक देखकर।

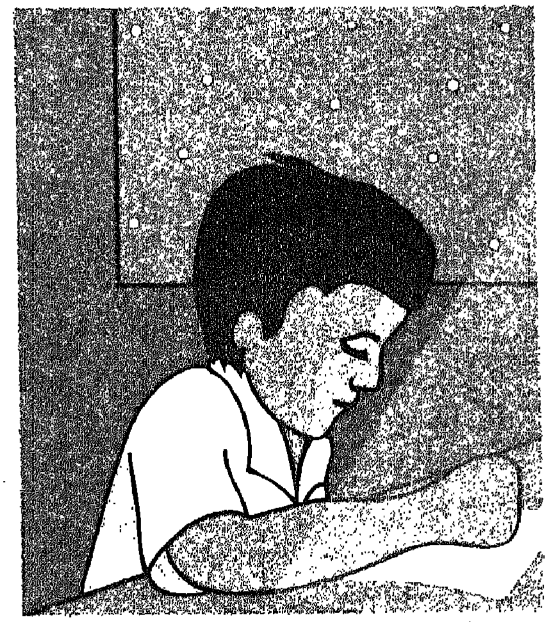


- ❊ इस परिवार में कौन-कौन है?
- ❊ पिताजी को सब के साथ टी.वी. देखने में ज़्यादा मज़ा आता है। क्यों?
- ❊ परिवार के लोग कैसे मज़े करते हैं?

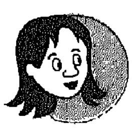
तोताराम

तोताराम अपने पिताजी, चाचा और चचेरे भाईयों के साथ मुंबई की बस्ती में रहता है। तोताराम और उसके भाई मुंबई पढ़ने के लिए आए हैं। उसके पिताजी और चाचाजी यहाँ नौकरी करते हैं।

घर का सारा काम सभी मिलकर करते हैं। तोताराम के चाचा के हाथ का खाना सभी को बहुत पसंद है। उसके पिताजी खरीदारी का सारा काम सँभालते हैं। वे जितना पैसा कमाते हैं, उसका कुछ हिस्सा वे गाँव में तोताराम के दादा को भेजते हैं। तोताराम की माँ, दादा, दादी, चाची और छोटे भाई-बहन गाँव के घर में रहते हैं। तोताराम साल में एक बार गाँव जाता है।



उसको अपनी माँ की बहुत याद आती है। वह उसे बहुत लंबी चिट्ठी लिखता है।



- तोताराम के परिवार के लोग एक-दूसरे से संपर्क कैसे बनाए रखते हैं?
- तोताराम के परिवार में कौन-से लोग शहर में रहते हैं? और कौन-से गाँव में? क्यों?

कृष्णा और कावेरी

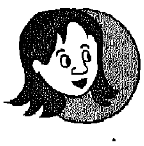
कृष्णा और कावेरी अपने पिताजी के साथ रहते हैं। सुबह तैयार होकर तीनों इकट्ठे घर से निकलते हैं। कृष्णा कावेरी को स्कूल छोड़कर कॉलेज जाता है। पिताजी दुकान जाते हैं, दिन भर के लिए।



दोपहर में कावेरी स्कूल से लौटकर ताला खोलती है और कृष्णा का इंतज़ार करती है। कॉलेज से आकर कृष्णा खाना गर्म करता है और दोनों मिलकर खाते हैं।

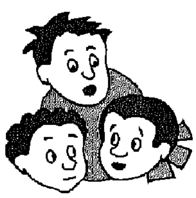
स्कूल का काम करने के बाद कावेरी बाहर खेलने जाती है। लौटकर भाई के साथ कभी कैरम खेलती हैं, कभी टेलीविज़न देखती है। पिताजी जब आ जाते है तब तीनों मिलकर खाना बनाते हैं और खाते हैं।

छुट्टियों में कावेरी अपनी माँ के पास रहने जाती है। कृष्णा भी कुछ दिन वहीं माँ के पास रहता है, पर उसे अपने घर में ही रहना पसंद है – उसकी सारी चीज़ें और पिताजी जो यहाँ हैं।

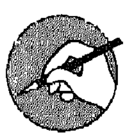


- कृष्णा अपनी बहन का ध्यान कैसे रखता है?
- परिवार में क्या-क्या काम इकट्ठे करते हैं?

तुमने कई परिवारों के बारे में पढ़ा। कुछ सवालों पर चर्चा भी की। परिवार क्या है? परिवार कैसे-कैसे होते हैं? इस बारे में तुमने अपनी राय तो बना ली होगी।



परिवार में क्या-क्या होता है?



दिए गए वाक्यों में से जो परिवार में होता है उन पर '✓' का निशान लगाओ।

- एक परिवार के लोग अक्सर एक-दूसरे जैसे दिखते हैं। ☐
- परिवार के लोगों को एक-दूसरे से बहुत प्यार होता है। ☐
- एक परिवार में जन्म होने से या शादी होने से हम उस परिवार का हिस्सा हो जाते हैं। ☐
- परिवार के लोग अक्सर एक घर में एक साथ रहते हैं। ☐
- परिवार के बड़े लोग अपने परिवार के लिए पैसे कमाते हैं। ☐

पाठ में कुछ परिवारों के बारे में बताया गया है। इनके अलावा भी कई तरह के परिवार होते हैं। इस विविधता को समझने के लिए बच्चों से उनके परिवार के बारे में चर्चा की जा सकती है।

- परिवार के लोगों का आपस में झगड़ा हो तो भी सभी साथ रहते हैं। ☐
- परिवार में बच्चों और बूढ़ों की देखभाल होती है। ☐

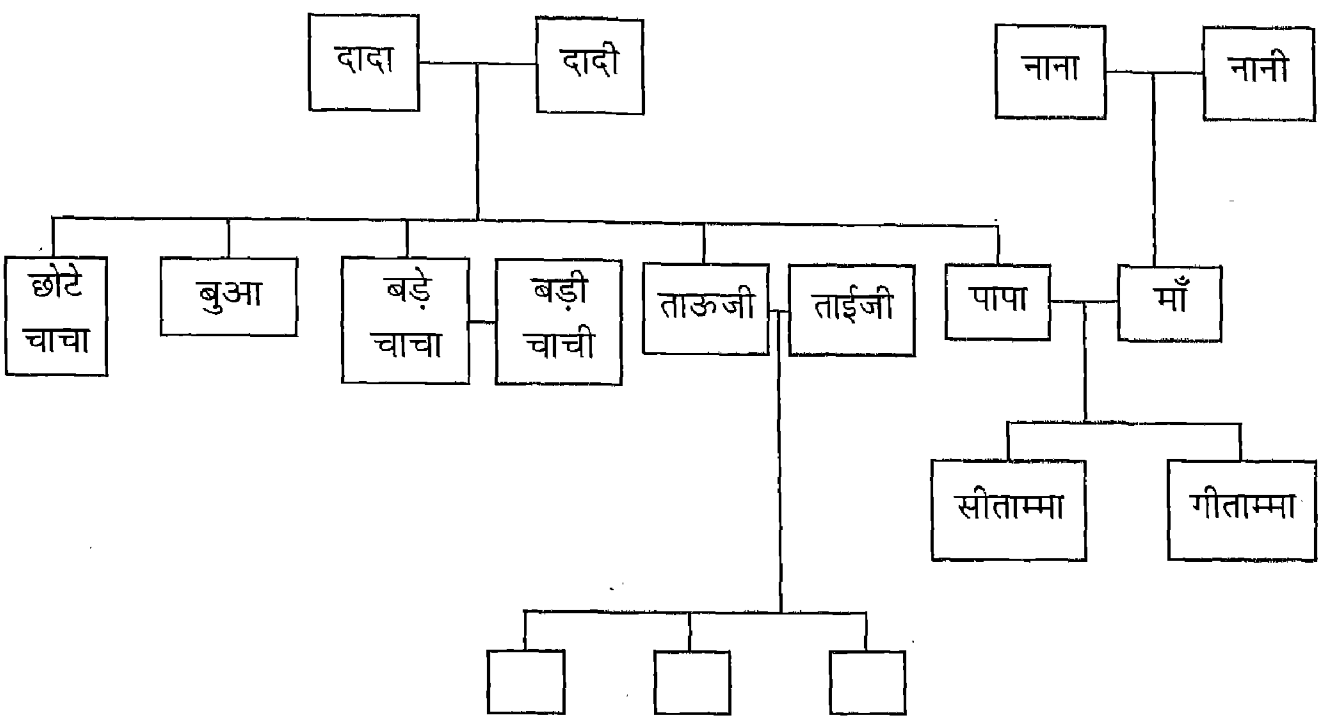
अपने परिवार की कुछ और बातें सोचो और खाली जगह में लिखो।

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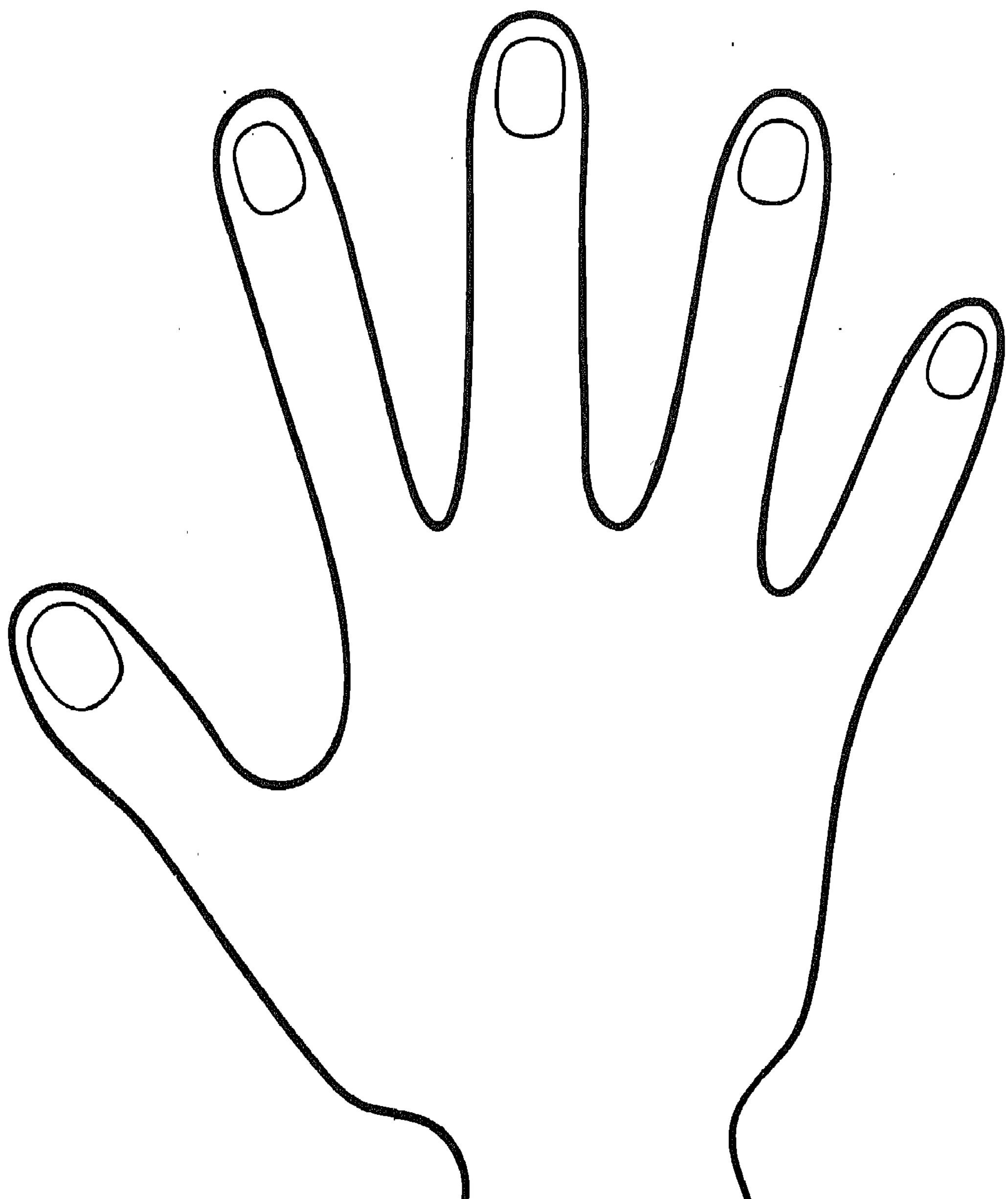
सीताम्मा का परिवार

क्या तुम परिवार की कल्पना एक पेड़ के रूप में कर सकते हो? यहाँ सीताम्मा के परिवार को चित्र द्वारा दर्शाया गया है।



चलो अब तुम भी अपने परिवार का इसी तरह का चित्र अपनी कॉपी में बनाओ। इसके लिए किसी बड़े की मदद लो। मदद के लिए सीताम्मा के परिवार का चित्र देखो।

नीचे एक हाथ का चित्र बना है। उस पर अपनी हथेली रखो। अँगूठे पर अँगूठा और उंगलियों पर उंगलियाँ।



तुमने जो हाथ चित्र पर रखा है वह तुम्हारा दायाँ हाथ है। अब अपना दूसरा हाथ कॉपी के पन्ने पर रखो और दाएँ हाथ से उसके किनारे-किनारे पेंसिल चला कर चित्र बनाओ।

इस बार तुमने जिस हाथ का चित्र बनाया है, वह तुम्हारा बायाँ हाथ है।

करो दायाँ हाथ आगे, करो दायाँ हाथ पीछे,
करो ये ऊपर नीचे और थोड़ा मुस्कुराओ।
आएगा... फिर मज़ा...
करो बायाँ हाथ आगे, करो बायाँ हाथ पीछे,
करो ये ऊपर नीचे और थोड़ा मुस्कुराओ।
आएगा... फिर मज़ा...

इसी तरह अब दाएँ पैर और बाएँ पैर के लिए भी गाओ।

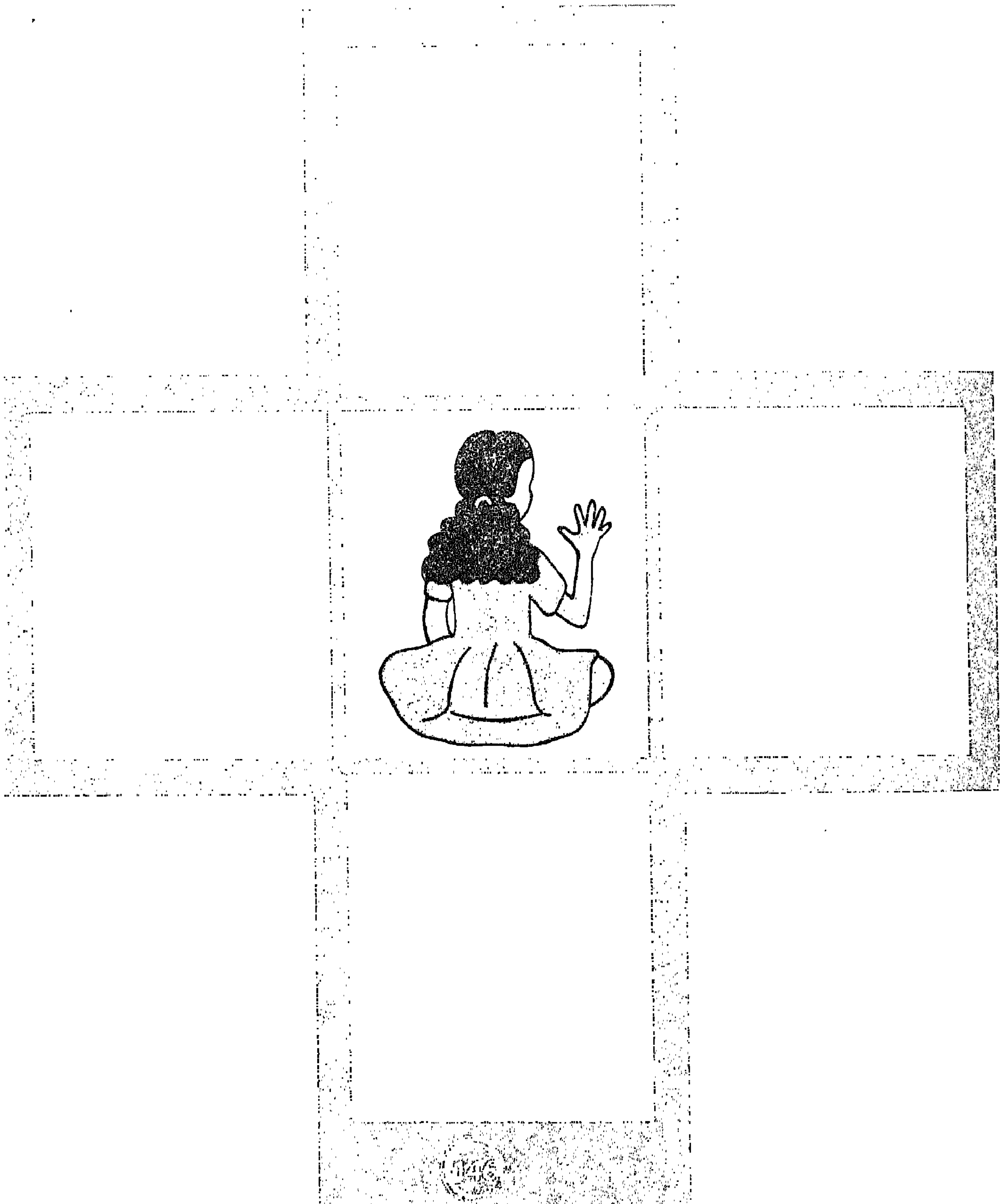
अब देखो और बताओ कि कक्षा में –

- तुम्हारी बाईं ओर क्या है?
- तुम्हारे पीछे क्या-क्या है?
- तुम किसके बाईं ओर बैठे हो?
- तुम्हारी दाईं ओर क्या है?
- तुम्हारी दाईं ओर कौन बैठा है?
- तुम्हारे आगे क्या है?
- तुम किसके दाईं ओर बैठे हो?

हाव-भाव के साथ गाना गाने में बच्चों को मज़ा आएगा व दायाँ-बायाँ, ऊपर-नीचे, आगे-पीछे स्वयं अपने अनुभव से सीखेंगे।

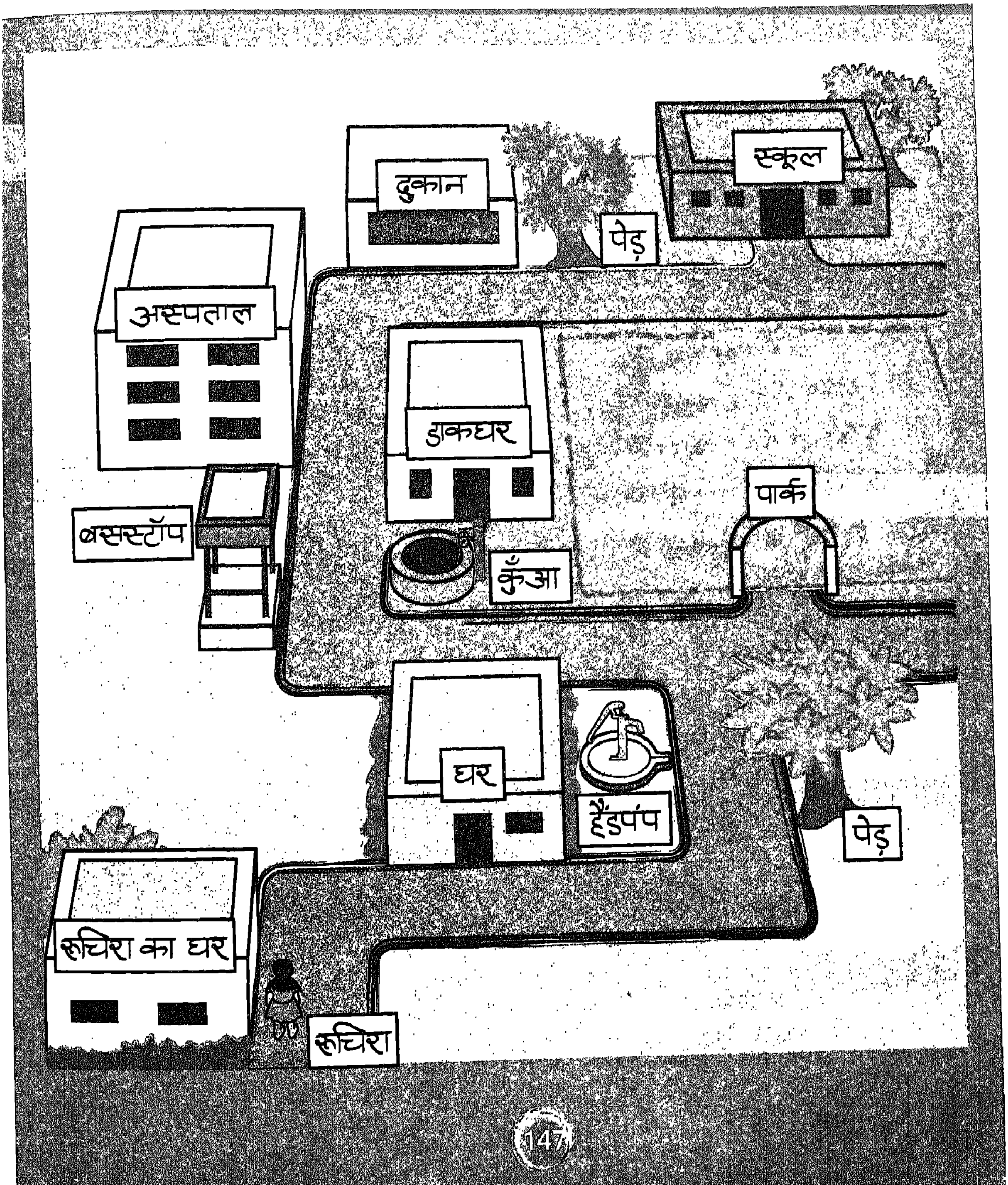
❖ यह एक चित्र है, जिसमें रुचिरा बीच में है। अब तुम इसी में चित्र बनाओ –

- रुचिरा के पीछे किताब का।
- रुचिरा के आगे पेड़ का।
- रुचिरा की दाईं तरफ़ किसी जानवर का।
- रुचिरा की बाईं तरफ़ कुर्सी का।



रुचिरा को घर से स्कूल पहुँचाओ।

चित्र में स्कूल देखो। घर से स्कूल तक का रास्ता भी ढूँढ़ो। अब रुचिरा के घर से स्कूल तक का रास्ता रंगीन पेंसिल से दिखाओ।



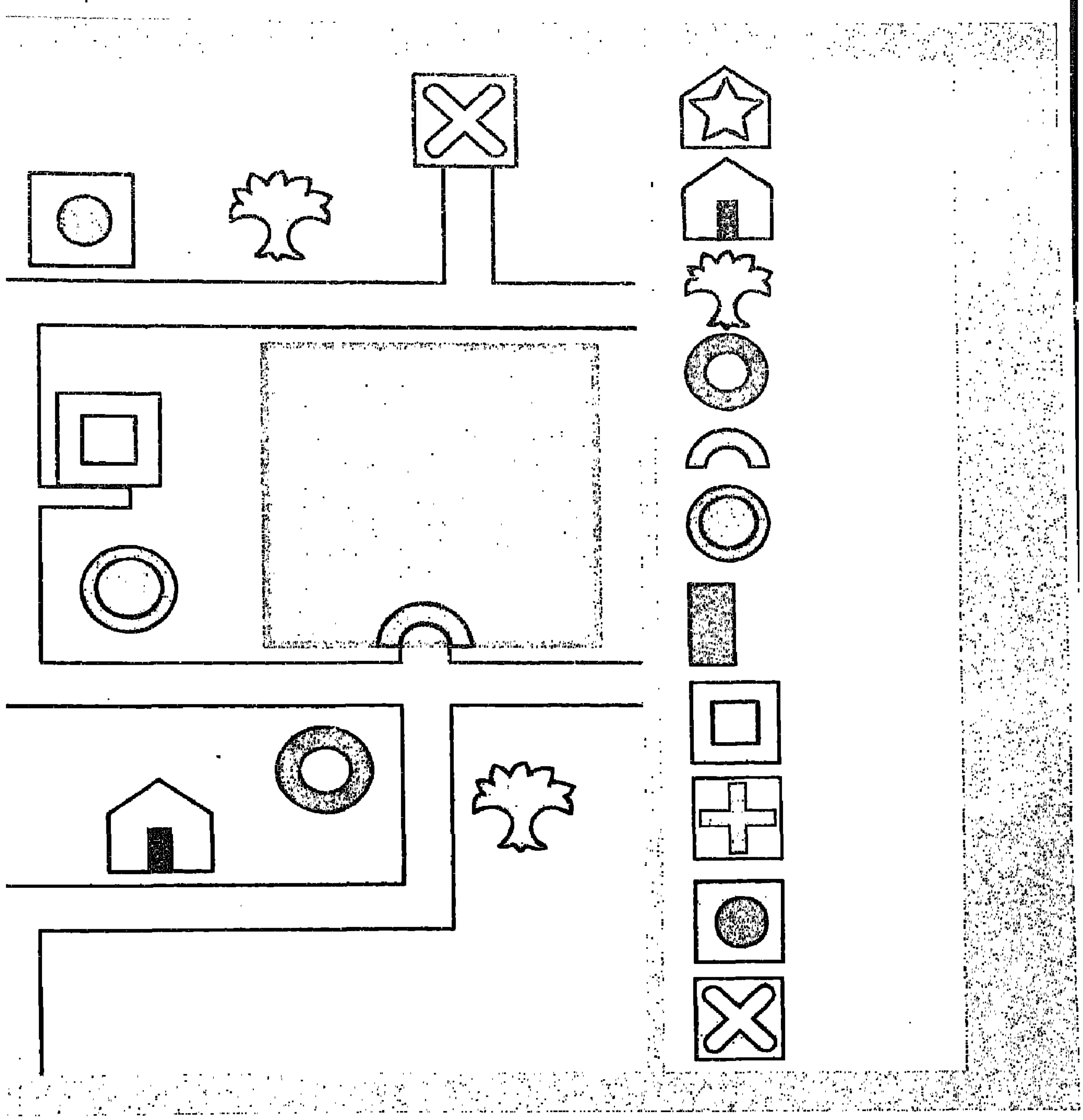
❋ रुचिरा को घर से स्कूल तक के रास्ते में कौन-कौन सी जगह मिलेंगी? उनके नाम लिखो।

❋ इनमें से कौन-सी चीज़ें दाईं ओर मिलेंगी और कौन-सी बाईं ओर?

दाईं ओर	बाईं ओर

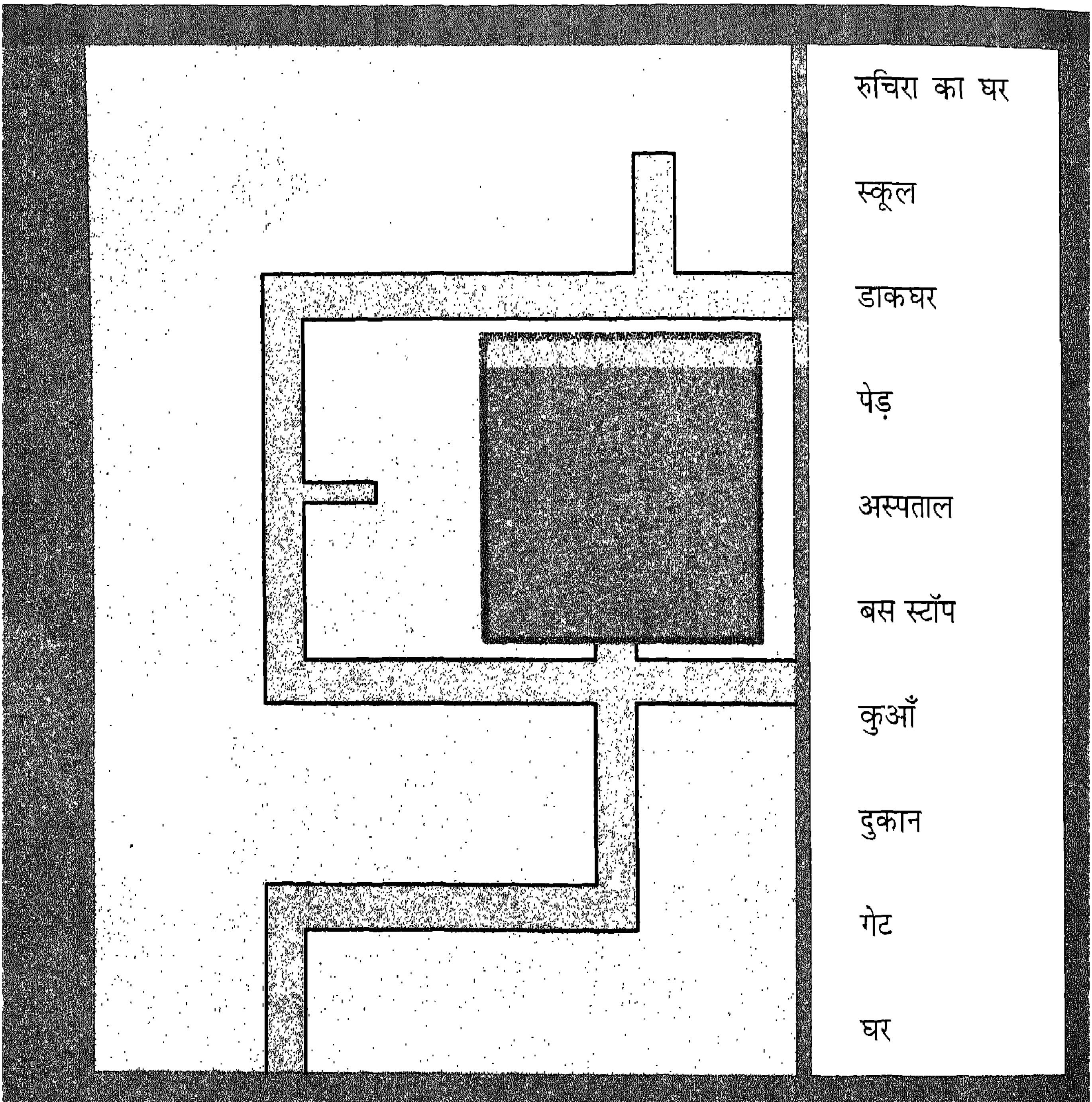
❋ रुचिरा को घर से स्कूल जाते समय कुल कितनी बार मुड़ना पड़ेगा?

अगले पृष्ठ पर एक चित्र बना है। यह चित्र पहले दिए चित्र का छोटा रूप है। इसमें जगहों के चित्र के स्थान पर निशान बनें हैं। ऐसे चित्र को नक्शा कहते हैं। निशानों को पहचानो और लिखो।



तुम बता सकते हो कि ये निशान क्यों बनाए जाते हैं?

नीचे चित्र के सामने एक सूची बनी है। इसमें तुम अपनी इच्छा से कुछ निशान (संकेत) बनाओ। ये निशान पहले वाले निशानों से अलग बनाना। अब तुम्हारे बनाए निशानों को नक्शे में भी बनाओ।



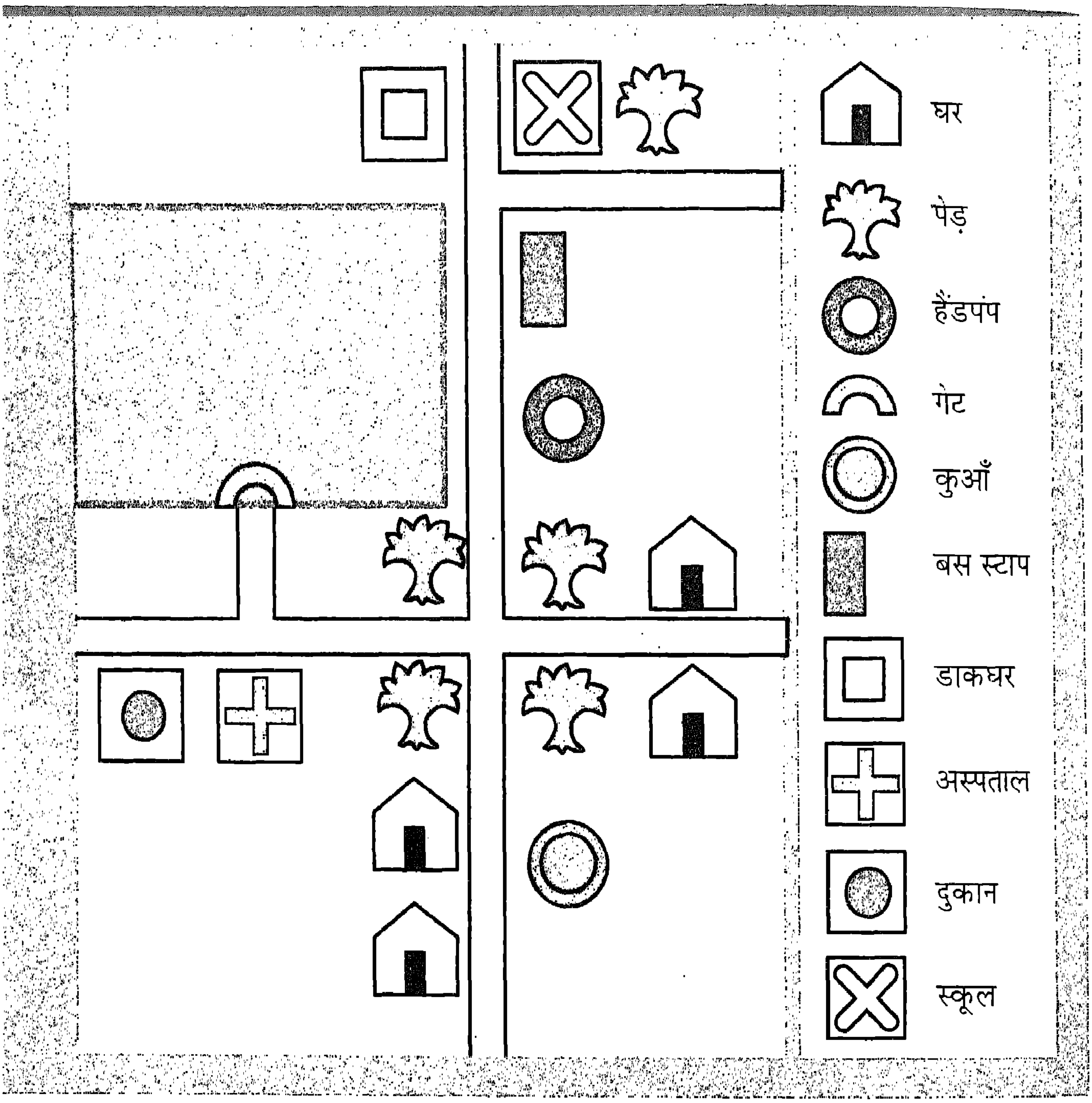
नक्शे में निशान बनाने की आवश्यकता को स्पष्ट करना और बच्चों द्वारा बनाए निशान पर चर्चा करना रुचिकर और उपयोगी रहेगा।

पृष्ठ 149 में तुमने अस्पताल पर '+' चिह्न देखा होगा। इस चिह्न की मदद से बिना पढ़े ही अस्पताल को पहचाना जा सकता है।

ऐसे और कौन-कौन से चिह्न तुम्हें अपने आस-पास दिखते हैं? उनके चित्र बनाओ। वे क्या दर्शाते हैं, यह भी लिखो।

चिह्न	क्या दर्शाता है

❖ नक्शे में दिखाए निशानों की सूची बनी है। ध्यान से देखो और लिखो।



- नक्शे में कितने घर हैं? ____________
- नक्शे में कितनी दुकानें हैं? ____________
- नक्शे में कितने पेड़ हैं? ____________

- नक्शे में कितने हैंडपंप हैं? ____________

- स्कूल पोस्टऑफ़िस के पास है या अस्पताल के पास? ______

- बस स्टॉप के पास क्या है? ____________

- यदि नक्शे के साथ सूची न होती तो क्या तुम नक्शा पढ़ पाते?

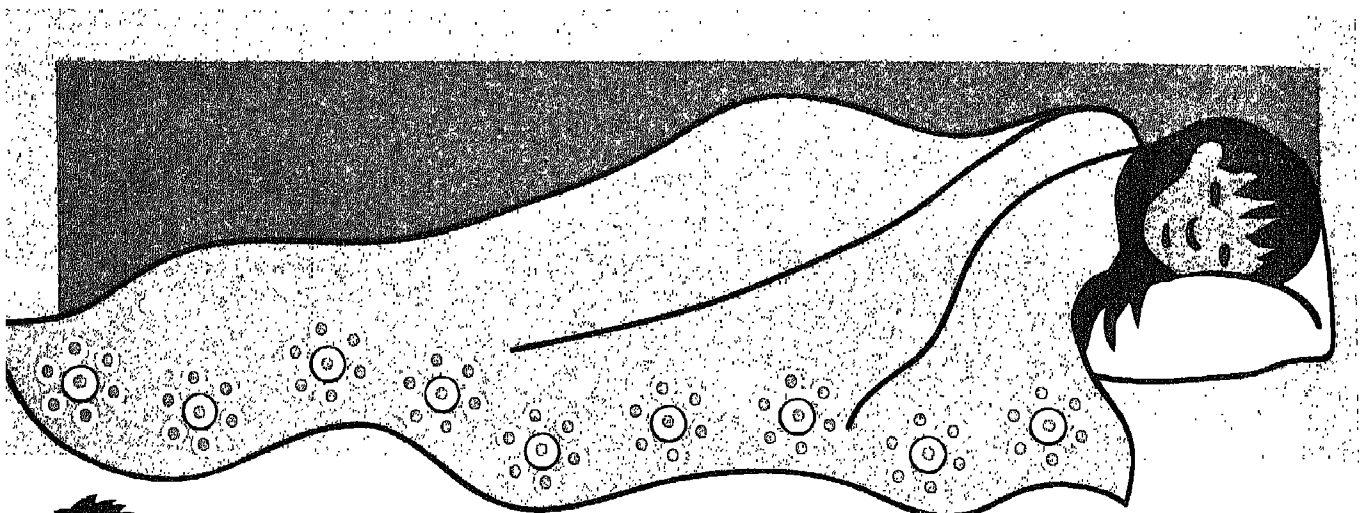
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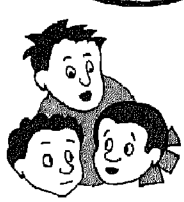
❋ गणित में जो चिह्न तुमने सीखे हैं उन्हें लिखो।

______ ______ ______

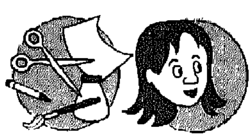
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साजिदा की आपा ने उस को एक बहुत सुंदर दुपट्टा दिया। दुपट्टे के ऊपर सुंदर कढ़ाई थी और शीशे भी लगे हुए थे। रात को खाना खाने के बाद साजिदा दुपट्टा अलग-अलग तरह से ओढ़ कर खेलने लगी। खेलते-खेलते थक गई तो वह दुपट्टा ओढ़े ही सो गई। सपने में वह सोचने लगी – इतना सुंदर दुपट्टा कैसे बना होगा?

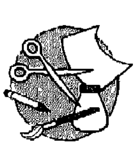




साजिदा का दुपट्टा कैसे बना होगा?

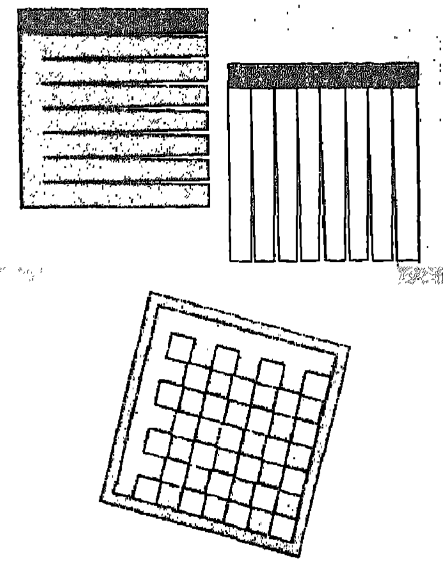


- तुम भी एक दुपट्टा या कोई थोड़ा लंबा बिना सिला कपड़ा लो। उसे अलग-अलग तरह से पहन कर देखो, कितनी तरह से पहन पाए?
- क्या किसी ने उसे लुंगी बनाकर या साफा बनाकर पहना? दुपट्टे को और कैसे-कैसे पहना?
- अपने घर में कोई छः कपड़े देखो। तुमने कपड़ों में क्या-क्या अंतर पाया – जैसे छूने में, रंग में, डिज़ाइन में?



- किसी मोटे कपड़े या बोरी को ध्यान से देखो। क्या तुम्हें खड़े और लेटे धागे दिखाई दिए? किसी भी कपड़े को नज़दीक से देखोगे तो तुम्हें ऐसी ही बनावट दिखाई देगी।

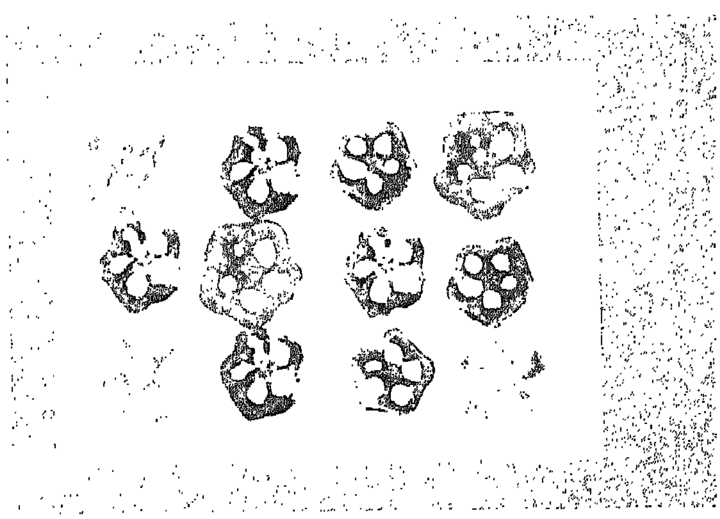
तुम भी इसी तरह कागज़ की पट्टियों को बुन कर देखो।



⁂ कागज़ से बुनाई

1. दो अलग-अलग रंग के कागज़ लो।
2. एक कागज़ पर खड़ी लकीरें खींचो और दूसरे पर लेटी।
3. दोनों कागज़ों पर खींची गई लकीरों को काटो। ध्यान रहे, पट्टियाँ अलग न हो जाएँ।
4. दोनों कागज़ों को एक-दूसरे के ऊपर रखकर उनके दो किनारे (जिन्हें चित्र में रंग से दिखाया गया है) आपस में जोड़ दो।
5. अब कटी हुई पट्टियों को एक-दूसरे के साथ बुनकर मैट बनाओ।
6. इसके किनारे पर एक कागज़ का बार्डर या टेप चिपका दो, जिससे वह खुले नहीं।

⁂ कपड़े पर छपाई

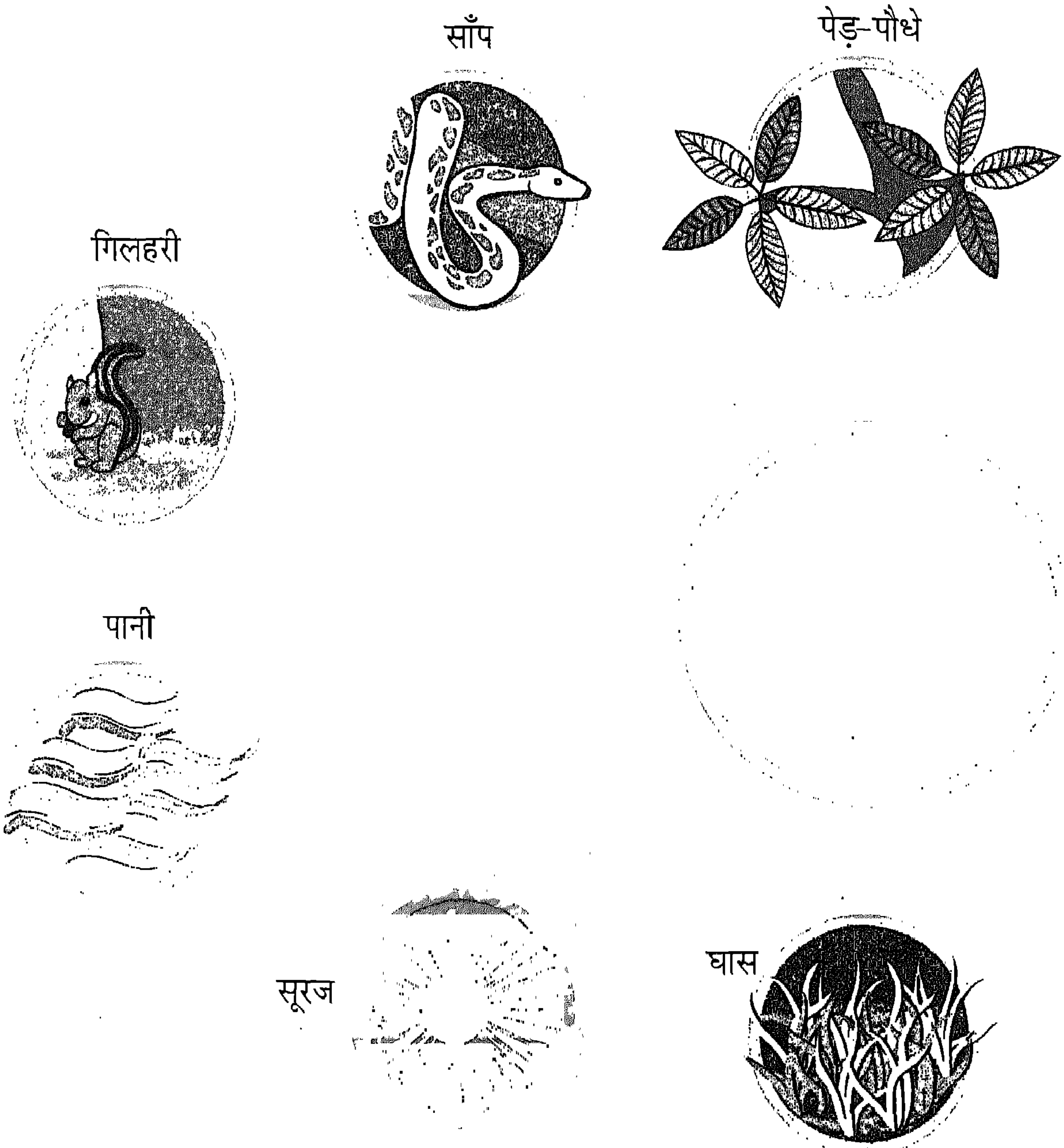


तुमने 'पौधों की परी' पाठ में कपड़ों पर बने फूल-पत्तियों के डिज़ाइन भी देखे। कटी हुई सब्ज़ियों की मदद से तुम भी कुछ डिज़ाइन बनाओ।

गोभी के फूल या भिंडी को बीच से काटो। उन पर गीले रंग लगाकर कागज़ या कपड़े पर ठप्पे लगाकर अपनी पसंद के डिज़ाइन बनाओ।

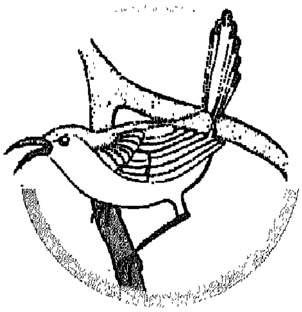
बच्चों द्वारा 'कागज़ की बुनाई' और 'कपड़े पर छपाई' करना हमारी पारंपरिक कला को बढ़ावा देगा। इससे बच्चों को अपनी कला दिखाने का मौका भी मिलेगा।

24 जीवन का जाल

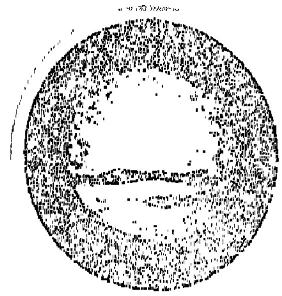


अब तक तुमने करीब-करीब यह पूरी किताब पढ़ ली होगी। तुमने पेड़-पौधों, जानवरों, पानी, घर, वाहनों तथा और भी कई चीज़ों के बारे में पढ़ा और सोचा। क्या

पक्षी

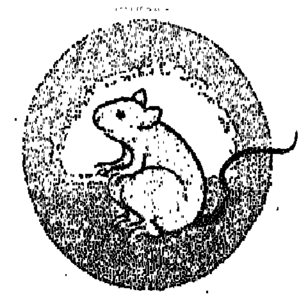


चंद्रमा

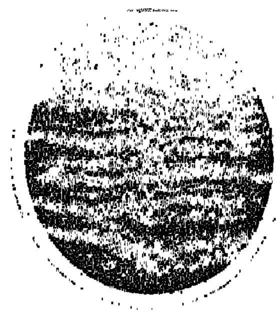


गाय

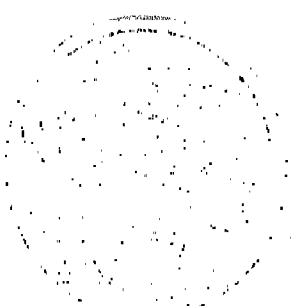




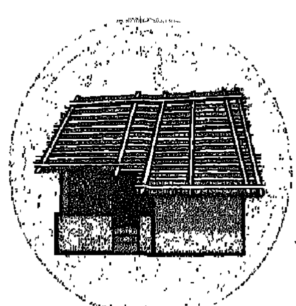
चूहा



मिट्टी



हवा



घर

तुम बता सकते हो कि हमने इन चीज़ों के बारे में कुछ जानने और सोचने की कोशिश क्यों की?

- हमारा चित्र में दिखाई चीज़ों से क्या नाता है? चलो पता लगाएँ –
- सबसे पहले दी गई खाली जगह में अपना चित्र बनाओ।
- अब अपने चित्र से एक लाइन खींचकर उन चीज़ों से जोड़ो जो तुम्हें अपने जीने के लिए बहुत ज़रूरी लगती हैं।
- क्या तुमने खुद को 'घर' से जोड़ा है?
- देखें, घर किन-किन चीज़ों से जुड़ता है। पहले सोचो – घर किन चीज़ों से बनता है?

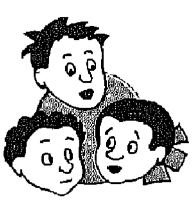
  - लकड़ी – जो पेड़ से मिलती है।
  - ईंट – जो पानी और मिट्टी से बनती है।
  - मिट्टी – हमें ज़मीन से मिलती है, और
  - पानी – हमें नदी, तालाब, कुएँ या बारिश से मिलता है।

तुम समझ गए न, घर को किन चित्रों या शब्दों से जोड़ना है?

अब इसी तरह एक-एक करके सभी चीज़ों को दूसरी चीज़ों से जोड़ो। यह सब करने में हो सकता है तुम्हें कुछ और चीजों के नाम लिखने की ज़रूरत पड़े।

इतना सब करने पर क्या बना? बन गया न एक बड़ा-सा जाल!

यह जाल देखकर तुम क्या समझे?



तुमने जो जाल बनाया है उसे अपने दोस्तों को दिखाओ और उनका बनाया हुआ जाल भी देखो। क्या सब एक जैसे हैं? साथियों के साथ इस पर चर्चा भी करो।

बच्चों द्वारा बनाया जाल उनके परिवेश में मिलने वाली चीज़ों की परस्पर निर्भरता की समझ को ~~दर्शाता है। कक्षा में इस~~ विषय पर चर्चा करने से उन्हें जाल बनाने में मदद मिलेगी।

show the percentile scores for the college population made by the average student in the following groups of college sophomores of different professional ambitions:

Number	Group	Average percentile
71	Journalism	71
253	Ministry	70
346	Law	64
	Teaching	54
609	Medicine	52
171	Engineering	38

Whether or not "general culture" is more essential for success in journalism, the ministry or law than it is in engineering and medicine, we cannot tell These facts are of some significance, however, with their implication that, on the average, students with higher scores in "general culture" are more apt to be interested in careers in the linguistic than in the technical professions

Reliability.—The coefficients of reliability for the individual tests, as well as for the test as a whole, are sufficiently high to meet the criterion which has been set up for tests when used with individuals

Test	Coefficient	Sigma of distribution
History and social studies	94	32 52
Foreign literature	97	34 03
Fine arts	96	34 54
Total score	98	88 70

Validity.—Since the test itself represents one of the first attempts to secure a quantitative measurement of "general culture," it has seemed impossible to find a more adequate measure of the trait with which to check the validity of the test As yet, there have been no attempts to discover relationships between test scores and ratings of general culture We shall have to look elsewhere for some measure of the test's validity In the first place, only those items were selected which seemed to be a

measure of "culture" in the opinions of the test makers and other competent judges Individual items were then, in a sense, validated They were ranked according to the percentage of persons in the experimental trials who were able to answer them correctly The criterion of acceptance of any item was that it must differentiate persons in the highest from those in the lowest quartiles Thus the test contains items of known difficulty which are responded to more correctly by persons who make the higher scores There is enough correlation (53) between the test and average college grade for two years to indicate that it is measuring "general scholarship," in so far as college grades are a satisfactory criterion There seems to be no sex difference as far as achievement on this test is concerned

Very complete data, in terms of differentiation of groups of students, are given in reports of the Cooperative Test Service

Publisher and Cost—Cooperative Test Service, 500 West 116th Street, New York Price, each test $0 10, less discount for quantities

References—Report of the Committee on Educational Testing, "The College Sophomore Testing Program," *The Educational Record*, October, 1933, 1934 and 1935 See, also, other reports appearing in the same journal in October of each year

CHAPTER VI

VOCATIONAL ACHIEVEMENT TESTS

There are very few well-standardized achievement tests for vocational education courses The scarcity of good tests in this field is partly accounted for by the fact that the shop courses themselves are not so standard from school to school as are the regular academic courses There are wide variations in the types of courses offered, the amount of time devoted to the different courses, and their grade placement This situation has not been stimulating to the standardization of achievement tests on a national basis Since the tests must be validated in terms of course content, items which might be suitable in one school system would be invalid in another. Norms developed from pupils in widely divergent school systems would have very little meaning under these circumstances

This situation, however, should not discourage efforts to produce standardized measurements in this field In fact, such instruments will themselves probably tend to decrease undesirable variation in curriculum content But it will probably be necessary to construct local norms rather than national norms for tests in this field

Another factor that is responsible for lack of progress in this field is the fact that research specialists in university departments of psychology and educational psychology are themselves academically trained and "academically minded" This bias in outlook leads them to direct their research efforts toward problems in the traditional school subjects. It is to be hoped that an increasing number of such research specialists will recognize the importance of occupational adjustment problems and will attack measurement problems in this area

Some of the vocational achievement tests which have been developed have aimed to measure information as well as performance A few tests appear to be sufficiently well standardized to warrant use, but many are to be criticized on a number of points The construction of the tests and test items has not

been done with sufficient care. Objectives of courses have not been outlined and items selected to sample these objectives. The items often are not based upon a careful and detailed analysis of the work. In most cases they are not validated from the standpoint of the test as a whole. The reliabilities, when reported at all, tend to be too low for use with individuals, but in some cases they are satisfactory for the comparison of classes. Norms are often in terms of median achievement of a small number of pupils who have probably received a special type of training. These general norms are not very useful, but they are improved when the norm group is described in terms of the amount of time spent in training. In some tests the scoring is rather subjective and involved.

A. SHOP COURSES

No attempt will be made here to describe in detail any of the tests in this field. The Fischer Mechanical Drawing Tests might be sufficiently reliable for use in comparing the achievement of classes, but the coefficient of +.79 reported, would not warrant its use with individuals. No information on reliability and validity is furnished in the Manual for the Castle Mechanical Drawing Tests. The Newkirk and Stoddard Home Mechanics Test appears fairly adequate from the standpoint of reliability, but the general norms given in terms of median achievement of subjects who have had different backgrounds of training are not very useful. The Nash-Van Duzee Achievement Tests in Woodwork and Mechanical Drawing appear to be superior to some of the other tests, especially because of the fact that the percentile norms are based on groups with known amounts of instruction. The performance part of the woodwork test, however, possesses a reliability which is too low for individual comparisons.

Persons interested in developing achievement tests in this field will be aided by consulting the volume on Minnesota Mechanical Abilities Tests which describes the construction of information tests as well as performance tests that can be used in measuring achievement in shop courses.

B. HOME ECONOMICS TESTS

The situation with respect to standardized measurement devices in the field of home economics is similar to that in the

field of shop courses. Well-standardized, reliable and valid tests are few in number. Those which have been developed do not compare in quality with measuring devices found in other academic fields.

1. Engle-Stenquist Home Economics Test, 1931, by E. M. Engle and J. L. Stenquist.

Description.—The three tests in this series are printed in separate folders and are as follows: Foods and Cookery, Clothing and Textiles, and Household Management. One hour is allowed for each test. Two equivalent forms are provided. Each test contains four parts which are differentiated on the basis of the type of objective question used. Part I consists of multiple-choice questions, Part II of true-false, Part III of matching and Part IV of brief answer.

The foods and cookery test measures information on nutrition, and the selection, preparation and serving of foods. The clothing and textiles test measures a knowledge of textiles, and the selection, planning and construction of clothing. The household management test deals with budgeting, family relationships and the furnishing of the house.

Designed For.—The purpose of the tests is to measure information in the three aspects of the field of home economics which are covered at the junior high school level. Results of this test may be used to compare the achievement of individuals and classes after a period of training, to measure growth, to classify students for instructional purposes, and to analyze the aspects of the subject matter of home economics in which the students are strong or weak.

Norms.—Age and grade as well as percentile norms are provided for both forms of all three tests. The norms are based on from 10,000 to 15,000 girls in the Baltimore public schools. Percentile ranks are given for pupils in 5B, 6B, 7B, 8B, and 8A. This makes it possible to compare an individual's score with others in her own grade. These norms are not reproduced here, since they are readily available in the test manual.

Reliability.—The authors report test-retest reliability coefficients for different groups of pupils at different grade levels. Their results, which follow, indicate that the separate tests yield consistent results within a single grade level.

Grade	Reliability coefficient	Number of cases
Foods and cookery		
5	93	117
6	94	110
7	93	110
8	92	110
Clothing and textiles		
5	93	149
6	96	115
7	94	110
8	94	110
Household management		
6	85	115
7	91	103
8	96	125

Validity.—The authors' claim for the test's validity rests upon the nature of the items selected, as well as its correlation with teachers' grades. The items included are those which are common to the best textbooks and courses of study They have also been approved by curriculum experts The validity coefficients obtained for different groups of 100 cases at different grade levels are reproduced from the test manual They were obtained by correlating scores obtained on this test with scores obtained on teachers' objective classroom tests These coefficients are surprisingly high

Grade	Test	Correlation
6	Foods and cookery	52
6	Clothing and textiles	81
5	Foods and cookery	98
5	Clothing and textiles	90

Publisher and Cost—World Book Company, Yonkers-on-Hudson, New York Price, 25 of any one test for $1 net

References—E M ENGLE and J L STENQUIST, *Engle-Stenquist Home Economics Test Manual of Directions*, Yonkers-on-Hudson, New York World Book Company, 1931

2. Unit Scales of Attainment in Foods and Household Management, 1933, by Ethel B Reeve and Clara M Brown

Description.—There are two equivalent forms, each containing two scales, for this test of achievement in the field of cooking and household management Questions are of the single-choice and completion types Each form requires only about one school period in which to complete it

Designed For.—Students in junior high schools who have had the type of training called for may be given this test It is devised for the purpose of measuring gain in achievement during the course of study and differences among pupils in the achievement measured

Norms.—The raw scores for both scales are converted into C-scores and averaged to obtain the final C-score. The C-score units are comparable over the entire range of scores In this way, it is possible to determine the absolute accomplishment of the pupil, since the C-score represents the level of difficulty which the pupil can reach and get half of the items right

Reliability.—The probable error of the final C-score on each form is 1 8 points, indicating that there is a fifty-fifty chance that the student's "true" score varies within 1 8 C-score points from her obtained score. This degree of reliability compares favorably with other tests of this same length in other subject-matter fields

Validity.—The test's claim for validity rests upon the items included and the extent to which these items sample the field

Publisher and Cost.—Educational Test Bureau, Minneapolis, Minnesota Prices 25 copies of either form for $0 75, sample set, $0 20

References—E B REEVE and C M BROWN, *Unit Scales of Attainment in Foods and Household Management Directions for Administering and Scoring*, Minneapolis, Minnesota Educational Test Bureau, Inc , 1933

3. The Minnesota House Design and House Furnishing Test, 1936, by Clara M Brown and Muriel F Puhr

Description.—There are two equivalent forms of this test, each requiring about half an hour of time and measuring ability

to recognize good design and management in houses and house furnishings Accompanying the test there is a series of three paired pictures of houses and interiors concerning which the examinee is asked to make certain judgments She is asked to indicate whether or not certain statements regarding design and arrangement apply to the pictures of exteriors, living rooms and bedrooms She is also asked to indicate agreement or disagreement with certain statements concerning ways in which the houses or rooms might be improved.

Designed For.—While this is most appropriate for students in high school who have had the advantage of a course in house design and house furnishing, the authors suggest that it may also be given at the junior high school and college levels, although it is too easy for most advanced students

Norms.—At the present time norms are being compiled by the test authors, and tentative ones may be secured from them at the University Farm, St Paul, Minnesota

Reliability.—The reliability coefficients for either form have been reported by the authors to be 90 for a high school group and 87 for a college group While indication is given of the variability of the group, these coefficients appear to substantiate the claim for the test's ability to yield consistent results for individuals at the secondary and college levels

Validity.—Claim is made for the test's validity on several counts In the first place, test items were passed upon by competent persons in the field as involving the principles of harmony, proportion, balance, rhythm, etc Furthermore, items were included if they discriminated between different grade levels of students In addition, one group of high school students which was below the average of high school groups in intelligence, but which had had better than average instruction in related art, scored above the high school average and equalled the college norm

Publisher and Cost.—University of Minnesota Press, Minneapolis, Minnesota Prices $2 per hundred, photographs, 25 for $1, sample set, $0 35

References—C M Brown and M F Puhr, *The Examiner's Manual for the Minnesota House Design and House Furnishing Test*, Minneapolis, Minnesota University of Minnesota Press, 1936, C M Brown, *Syllabus for Educational Measurement, Part A*, Minneapolis, Minnesota University of Minnesota Division of Home Economics, 1936

C. TYPEWRITING AND STENOGRAPHY

1. Blackstone Stenographic Proficiency Tests (Typing) 1923, by E G Blackstone

Description.—The first test of this series measures proficiency in typing There are five forms of equivalent and carefully constructed business letters which make it possible to measure progress without repeating the same material Three minutes are allowed for the test and the score is determined by taking into account the number of strokes completed and the errors made

Designed For.—The test is appropriate for students of varied amounts of training in typing

Norms.—The Manual of Directions contains norms established for 2188 students who have had various amounts of training The median scores of these groups with different amounts of practice are given

Reliability —The author reports a reliability of + 93 for 105 students with 20 months of instruction The students repeated the test by taking a second form The probable error of the score is 5 8 points The test may be considered sufficiently reliable for use with individuals

Validity.—There is a significant differentiation on this test between mean scores obtained from students with different amounts of training in typing

Publisher and Cost —World Book Company, Yonkers-on-Hudson, New York Prices 25 of each form for $1, sample set, $0 10

References —E G BLACKSTONE, *Manual of Directions, Blackstone Stenographic Proficiency Tests*, Yonkers-on-Hudson, New York World Book Company, 1923

2. Blackstone Stenographic Proficiency Tests (Stenography Test) 1932, by E G Blackstone and Mary McLaughlin

Description.—There are two forms of the stenography test, each containing seven parts (1) English, (2) syllabification, (3) office practice, (4) alphabetizing, (5) abbreviations, (6) business organization, (7) transcription

The transcription test consists of two letters dictated at a standard rate Twelve minutes are allowed for transcription

and the remaining tests require about 35 minutes. Details for scoring are provided

Designed For.—The test may be administered to students with varying amounts of training in stenography

Norms.—Mean scores on the total test and on each subtest are provided for 1000 students with various amounts of training and for successful stenographers on the job

Reliability.—The author reports a reliability coefficient of + 88 ± .02 for the two forms given to 1000 high school students

Validity.—When efficiency ratings for 37 stenographers were correlated with test scores, the coefficient was found to be + 62 ± 06 For 49 additional stenographers a coefficient of + 79 ± 03 was obtained The validity indices may be regarded as satisfactory, in view of the variety of factors other than ability that are likely to enter into efficiency ratings

Publisher and Cost.—World Book Company, Yonkers-on-Hudson, New York Prices, 25 of each form for $1 20, sample set, $0 20

References.—E G. Blackstone, *Manual of Directions Blackstone Stenographic Proficiency Tests,* Yonkers-on-Hudson, New York World Book Company, 1923

3. Stenogauge, 1923, by E J Benge

Description.—The purpose of this test is to "gauge" the stenographer's ability to take dictation, to transcribe a letter rapidly and accurately and to spell The test consists of a standard letter of several hundred words which is dictated at a rate as rapid as the individual can take. The letter is then typed out and the time and errors are recorded. A list of spelling words, one-half of which are misspelled, are checked for errors The individual's score consists of the sum of the words dictated per minute, the words transcribed per minute, the percentage of words correctly transcribed and the percentage of words spelled correctly

Individual testing is desirable The time required for the examinee is about 15 minutes and for the examiner about 7 minutes

Designed For.—The test may be administered to persons who claim some skill in typing and shorthand Although it is most appropriate for stenographers, it may be used for typists by having them copy the letter

Norms.—Percentile norms based on over 500 stenographers are provided in the test manual Percentile norms for typists are also included

Reliability.—No published information

Validity—The author reports a follow-up study of 24 stenographers who were employed, from among 145 applicants of one concern, partially on the basis of Stenogauge test scores They were rated from one to ten by "a competent rater" and it was found that the three applicants who were rated lowest had received the lowest test scores The test separated the failures from the successful workers but did not separate the "excellent" from the "average" workers There was a rank order correlation of + 44 between test scores and success ratings

When 17 stenographers in another concern were rated by six executives, the correlation of test scores and combined ratings was + 89 There is some evidence here that a high score on this test is associated with success on the job

Publisher and Cost—Stenogauge Agency, 3136 North 24th Street, Philadelphia, Pennsylvania, also distributed by Psychological Corporation, 522 Fifth Ave, New York Prices one set—containing instructions, norms, and 10 blanks for $3, additional blanks, each, $0 05

References—E J Benge, "Gauging Stenographic Ability," *Administration*, February, 1923, 156–163, M Freyd, "Selection of Typists and Stenographers," *Journal of Personnel Research*, 1926–1927, 5 490–510, H E Garrett and M R Schneck, *Psychological Tests, Methods, and Results*, pp 173–174, New York Harper & Brothers, 1933

D. BOOKKEEPING

1. Elwell-Fowlkes Bookkeeping Test, 1928, by F H Elwell and J G Fowlkes

Description.—According to the authors, "These bookkeeping tests are designed to furnish a reliable, valid and comparable measure of achievement in bookkeeping for use in high schools and business colleges" There are two tests, each consisting of two nearly equivalent forms, *A* and *B* The first test covers subject matter included in the standard curriculum of first semester bookkeeping and the second measures achievement in second semester bookkeeping There are nine parts, covering the main fields in bookkeeping. General theory, journalizing, classification, adjusting entries and closing the ledger, and statements The questions are objective true-false, multiple-

choice, and completion types The time required for administration is about one hour

Designed For.—Test 1 is designed for high school and business college students who have completed the first semester in bookkeeping and Test 2 is for second semester students

One of its purposes is to aid in advising students regarding continuing and specializing in bookkeeping The authors suggest that those in the upper 5 per cent may be encouraged to major in bookkeeping, other things being equal The student, who evidences by this test that his achievement is below average, may be advised against taking more advanced courses

This objective test may be used to supplement or supplant the regular course examination It should also prove valuable in the assignment of pupils to beginning courses where it is difficult to ascertain the student's achievement because of transfer from another school, or for other reasons Especially in borderline cases, this test might be administered to ascertain whether the pupil has sufficient command of the subject matter to advance

Norms.—The author has supplied percentile norms for the two forms of both tests, based upon about 250 students each Abbreviated norms taken from his table are given below

Percentile	Test 1		Test 2	
	Form *A*	Form *B*	Form *A*	Form *B*
90	94	93	91	88
75	86	87	84	79
50	79	79	71	68
25	67	67	57	55
10	59	52	50	43

Reliability—For a group of 256 students in first-semester bookkeeping the coefficient of reliability between Form *A* and Form *B* was + 82 For Test 2, which was given to 226 second-semester students, the form versus form correlation was + 87 Since two forms are available, it is advisable to administer both forms to increase the reliance which can be placed upon any one individual's score

Validity.—The fact that the items have been very carefully selected by subject-matter and test experts to represent a com-

prehensive list of facts covered in the curriculum attests to the instrument's validity Further evidence of validity has been its tryout and favorable acceptance by teachers of bookkeeping courses.

Publisher and Cost.—World Book Company, Yonkers-on-Hudson, New York Price, when purchased in packages of 25, $0 052 per test

References.—F H ELWELL and J G FOWLKES, *Elwell-Fowlkes Bookkeeping Test Manual of Directions*, Yonkers-on-Hudson, New York World Book Company, 1929 L A THOMPSON, *Interview Aids and Trade Questions*, New York Harper & Brothers, 1936

E TRADE TESTS

1. Interview Aids and Trade Questions, 1936, by L A Thompson, Jr , D C Lawrence and A Allardyce

Description.—The above authors have published, in *Interview Aids and Trade Questions for Employment Offices*, 131 different oral trade tests The number of questions in each different test is in the neighborhood of twenty The general form is similar to those developed for use in the army and many of the questions from the army tests have been retained, while others have been revised and brought up to date to agree with present practices Some entirely new tests have been constructed

The questions and the answers are presented orally while the examiner records the answers verbatim and scores the responses The total score is interpreted by reference to norms which give a decile rating, which may in turn be interpreted as "expert," "journeyman," "apprentice" or "novice "

In constructing the trade questions the following rules, laid down by the Trade Test Division of the Committee on Classification of Personnel in the Army, were used.

1 Each question within each trade group must be applicable to the trade

2 The question must represent a principle of action which is based upon sound trade practice and custom.

3 It must be suitable for use in any geographical location

4 It must differentiate between the various levels of trade ability in such a way that (*a*) no novices can obtain high scores; and (*b*) apprentices within the occupation must have lower scores than journeymen, and so far as possible, experts should be able to answer the questions in a distinctly superior manner to the journeymen.

5 The questions must not yield a wide variety of correct answers

6 Questions must not contain colloquial terms or require colloquial terms as answers

7 Questions must be free from ambiguity

8 They must be simple to administer

9 Catch questions must not be used

The above rules are quoted in full because they apply in the construction of informal new-type subject-matter tests, as well as for standardized achievement tests In fact, the trade-test technique itself has contributed directly to the development of educational achievement tests

Designed For.—The purpose of these trade questions is to supplement other information regarding an individual's trade status and proficiency They are of especial assistance to the employment interviewer faced with the need for determining an individual's qualifications and correctly classifying him for employment

They may be of some value to the school counselor in determining the trade knowledge of the pupil who has had some trade training or experience and who is leaving school to seek employment Such information should be transmitted to the placement interviewer, together with other pertinent school records

Norms.—For each trade test there is furnished a rating table by which scores may be transmuted into decile ratings These, in turn, may be interpreted in terms of degree of trade knowledge The individual may be assigned a position on the scale from "expert" to "novice"

The authors point out the necessity for a liberal interpretation of test scores A great many other factors should supplement the test data before a rigid assignment is made to any one trade classification

Reliability.—No figures on the consistency of any of the tests are reported by the authors

Validity.—Although the authors advise against a ready acceptance of test scores as perfectly valid indices of the individual's trade knowledge and skill, their manner of construction indicates that they are superior to less objective procedures

In gathering together the individual items, persons known to be experts were consulted, as well as current trade journals and

other sources of information In some cases, items were included which were shown to differentiate between persons making high scores on the test as a whole and those making low scores

Publisher and Cost—Harper & Brothers, New York Price, $2 50

Reference—L A THOMPSON, JR, and Associates, *Interview Aids and Trade Questions for Employment Offices*, New York Harper & Brothers, 1936

CHAPTER VII

PERSONALITY TESTS AND QUESTIONNAIRES

In discussing tests of scholastic aptitude and achievement we were dealing with a field of human measurement which has been most fruitful Years of careful experimentation and statistical analysis have produced a body of systematized knowledge, as well as a definite methodology Moreover the significance or validity of the traits measured has been fairly well established, so that today the counselor has available extensive knowledge of the meaning of the scores of many tests of aptitude and achievement A counselor not only can diagnose these traits with reasonable accuracy, but he also can use the test results with a fair degree of assurance in making a prognosis of educational and occupational adjustment.

However, diagnosis of personality traits is more complicated The history of research in this field is much shorter, less extensive and less fruitful Nevertheless, the problem of constructing reliable personality tests has apparently reached a fairly satisfactory stage and we now have available a number of tests which have odd-even and test-retest reliability coefficients of fairly high magnitude, although these coefficients are, in general, lower than those for tests of intelligence and achievement But progress has been impeded, if not blocked, by failure to develop an adequate methodology for determining validity

The usual method of determining the validity of an intelligence test is to correlate its scores with another measure of intelligence This so-called "outside criterion" may be another, standardized and accepted, *test* of intelligence, or *judgments* of intelligence made by teachers, employers or other persons who have had opportunity to observe the persons tested [1] This use of an outside

[1] MAY, M A, and HUGH HARTSHORNE, "Objective Methods of Measuring Character," *Ped. Sem*, 1925, 32 45–67, see also D G PATERSON, *et al*, *Minnesota Mechanical Ability Tests*, p 586, Minneapolis University of Minnesota Press, 1930

criterion as a check on validity, or measure of it, has, unfortunately, introduced certain serious errors which depress our coefficients of validity That *judgments* of abilities and achievement are shot through and through with errors is a well-established fact and needs no supporting review of the literature. But if we cannot validate a test by correlating it with a judgment criterion which is low in reliability and validity, then how shall we determine validity of our tests?

Such circuitous reasoning has led a great many statistical psychologists and test makers into the defensible position of arguing for the *self-validation* of tests [2] If a test measures a trait reliably then, *ipso facto*, it is measuring that trait validly In this methodology, then, a test is validated by making a rigorous item analysis to make certain that only items which contribute to, or correlate optimally with, the total score, are included The next step involves determination of the maximum validity possible, assuming a perfect criterion which is itself another measure of the trait, afforded by a *statistical* or *mathematical* validation and not by correlation with an *outside* criterion

Another school of test makers continue to determine validity by correlating tests with outside criteria, but with full awareness of the limited coefficients attainable when criteria are faulty These psychologists recognize that validity coefficients of 60 or 70 are really extremely high in view of the faulty criteria used and that coefficients of 80 and higher are unattainable at the present time

One more significant point may be drawn from other fields of test construction Validity has come to mean not only, does a test measure what it is supposed to measure, but also, what is the significance of the trait measured? That is, a good deal of trial-and-error search is made to discover with what a reliable test will correlate In other words, test makers correlate tests with many things to discover what is being measured, this procedure eventually leading to a definition of the meaning of a test in terms of the things with which it correlates In regard to tests of intelligence, this empirical search has led to the knowledge that what the tests measure is found, used or

[2] The statistical basis for this point of view is presented in M A May, H Hartshorne and F K Shuttleworth's *Studies in the Organization of Character*, pp 454–456, New York, The Macmillan Company, 1930.

involved in getting grades in academic school subjects and in succeeding in certain types of occupations By way of briefly elaborating the last point, we may point out that it was discovered in analyzing test scores of white recruits in the World War that occupations may be arranged in a hierarchy according to the level of intelligence possessed by men in such occupations

Aptitude and achievement tests, then, are validated by discovering the outside criteria with which they are correlated We have at hand in our social order two judgment criteria, teachers' classifications of pupils and employers' classifications of employees These outside criteria simplify the task of validating tests of intelligence and achievement.

On the other hand, when we turn to tests of personality we discover that nowhere in our social order are people sharply classified as to types and amounts of personality traits The commitment of persons to insane institutions is, of course, an exception to this statement, but such persons cannot always be used as criterion groups, because of difficulties in eliciting responses to test questions To return to our point, if we had in society some sifting out and classification of persons on the basis of personality traits, then more rapid progress in this field might result At the present time test makers search diligently for such outside criteria with but meager results

We have made this lengthy preface to a presentation of personality tests in order that the reader will better understand the nature of such tests, will be sensitive to the technical problems involved in test construction, and will not carry over from previous chapters a rigid interpretation of validity indices These data should be interpreted, not only in terms of what is desirable, but also in terms of what is possible with the present methodology. Parenthetically, such an attitude should be acquired by those mathematical purists who complain because our validity coefficients of intelligence tests are less than 1.00, utterly ignoring the errors of teachers' grades

As stated at the beginning of this chapter, progress has been made in constructing personality tests with fairly high reliability, but high validity is more difficult to achieve. Moreover, what to do with test scores, what interpretations to make, and what prognoses to record are questions that can be answered only tentatively at the present time Our statistical analyses and

clinical uses of personality tests are only now beginning to yield promising results

A final word of orientation There are no right or wrong answers to tests of personality, such as there are in tests of intelligence All test scores are "high" or "low," "favorable" or "unfavorable," relative to the scores of other persons All scores are *relative* to a defined criterion group If an individual has a test score similar to that made by members of a defined group, then he may be said to resemble members of that group In the case of some tests, this is tantamount to prognosticating that he will prove to be, or is adjusted or maladjusted, since he resembles persons selected as being adjusted or maladjusted In the case of Strong's interest test a student who gets a score similar to that made by the criterion group of successful accountants may be diagnosed, *other things being favorable,* as a potential good risk for training and employment in that field With respect to diagnosis and prognosis, therefore, personality tests may be used in much the same way as are other tests, even though the rightness and wrongness of test questions are not the same But it should be repeated that we know less of the significance of scores of personality tests, that is, we know less of what a student with a given personality test score can and will do, than is true of scores of other types of tests

The coefficients of correlation between personality tests and school grades are so low as to indicate negligible relationships This means that such tests cannot be used for predictions of scholarship in the way intelligence tests are used In other words, personality tests must be used in diagnosing and counseling with respect to emotional and attitudinal problems Clinical experience indicates that such problems may have a bearing on achievement, but the relationship is not direct It is evident, therefore, that personality tests should be used to diagnose emotional maladjustments, which, in turn, may or may not be associated with scholastic problems In other words, the school counselor will not confine his use of these tools to problems of educational guidance alone

With this introduction, we turn now to a presentation of a number of personality tests In this review we shall not include any of the so-called "character" tests, since most, if not all, of them have been developed as instruments for research or survey

purposes At the present time such tests have not been used sufficiently in clinical and counseling practice to evaluate their usefulness, at least such clinical use has not been reported in the literature of psychology and guidance

A. INTEREST INVENTORIES

1. Interest Questionnaire for High School Boys, by O K Garretson and P M Symonds

Description.—This questionnaire contains 234 items covering such topics as occupations, school subjects, activities, things to own, magazines, prominent men in different fields of endeavor, qualities most admired in people and activities of parents Each item has three possible answers, *L* (like), *I* (indifferent) and *D* (dislike). Most students fill out the questionnaire in 30 minutes It may be given individually or to groups

The questionnaires of 460 pupils with average marks above the average of their classes were subjected to item analysis to determine which items differentiated between boys enrolled in the academic curriculum, the commercial course or the technical course of study Item scoring weights derived from the item analysis were then used to score the questionnaires of 300 new pupils.

Designed For.—This interest inventory, yielding three interest scores, is designed for use with boys in Junior High School Biserial *r* between the total scores and enrollment or non-enrollment in the technical curriculum was .87; for the commercial curriculum the *r* was 73; and the coefficient for the academic curriculum was 56.

Norms.—A score of 235 on any of the three keys indicates "neutral" (or indeterminate) interests; a score above 235 indicates definite preferences, and a score below 235 indicates the absence of preferences for a particular type of curriculum

Reliability.—The corrected odd-even coefficient for 75 pupils (25 from each of the three curricula) was .95 for the technical key; 93 for the commercial key; and 86 for the academic key

Validity.—One important indication of validity is revealed by the biserial coefficients reported above The three keys do indicate a high degree of accuracy in the differentiation of groups of pupils enrolled in these different curricula The authors, using an arbitrary critical score on each of the three keys, found

that 80 5 per cent of the pupils with technical inclinations, 75 5 per cent of those with commercial preferences and 73 6 per cent of those with academic interests were placed or located in the proper curriculum by the interest inventory

The correlation between the technical key and school marks, however, was only 29, between the commercial key and marks the coefficient was 03, and between the academic key and school marks, .15 There is, therefore, little relationship between curricular preferences and achievement in those curricula Thus, this seems to indicate that achievement in any curriculum is dependent upon intelligence and special abilities and not upon measured interests Presumably, the interest test measures the type or kind of interests a boy possesses without any guarantee that the boy will be able to succeed in the field of his special interest In spite of low correlations between interest and ability, it is obvious that the interest test has important guidance value, since it helps to identify the type of work the boy will find congenial Ability tests will then help to identify the *level* within a field that will permit success

The relationship between technical and commercial interests is indicated by coefficients of − 74, − 71, and − 69 for three different schools The coefficients between technical and academic interests are − 62, − 57, and − 50 The corresponding relationship between academic and commercial interests is indicated by the coefficients of + 21, + 04, and − 02

Publisher and Cost.—Bureau of Publications, Teachers College, Columbia University, New York Price, $3 per hundred

References—O K GARRETSON, "Relationships between Expressed Preferences and Curricular Abilities of Ninth Grade Boys," *Contributions to Education*, 396, New York Teachers College, Columbia University, 1930, P M SYMONDS, *Tests and Interest Questionnaires in the Guidance of High School Boys*, New York Bureau of Publications, Teachers College, Columbia University, 1930

2. Vocational Interest Blank for Men, 1927, by E K Strong, Jr

Description.—The blank is an eight-page leaflet listing 420 items covering occupations, amusements, school subjects, activities, peculiarities of people and estimates of present abilities and characteristics The individual indicates whether he likes, is indifferent to or dislikes each item Most men complete the blank in half an hour, but longer time is allowed if needed

Scoring is complicated and expensive The tests may be scored at Stanford University, the Columbia University Statistical Bureau and the University of Minnesota Testing Bureau The blank may be scored for fewer than the total number of occupations for which scoring keys have been prepared The intercorrelations between certain of the occupational scoring keys are high, making it possible to obtain a rating in one occupation which will be characteristic of a group For example, the physicist interest pattern is typical of the science group, the life insurance, of the selling group; the minister and the personnel manager, of the social service group; and the accountant, of the business group. The C.P A key, however, seems to be in a class by itself The lawyer, journalist and advertiser scales are quite similar

Designed For.—This test indicates in general the occupational field in which an individual is most likely to find satisfaction, provided, of course, that he has the requisite aptitudes It affords a means for comparing an individual with successful persons in a given occupational field, on the basis of a wide variety of likes and dislikes The author of the test has pointed out that it is an attempt to measure "the sum total of all interests that bear in any way upon an occupational career"

Although high scores cannot be taken as indications of ability in the occupation, yet they do measure interest, which is one important aspect of occupational adjustment In at least one of the occupations, life insurance selling, however, Strong has shown that there is a high positive correlation between measured interests and success [3] It appears that this key, in a sense, is a measure of social intelligence, which in turn is the ability necessary for success in this vocation On the whole, though, the man who resembles successful men in his occupation in regard to this complex pattern of interests will not necessarily be particularly successful He will, however, have greater chances for satisfaction in that occupational field than if he were totally unlike his co-workers with respect to these measured interests

The applicability of the blank is limited at the lower range of the age scale Use of the test probably should be restricted to age levels above 18, and preferably to men above 20 years of age

[3] STRONG, E K, JR, "Relation of Interest to Ability in Terms of Life Insurance Scores and Sales Production," *Psychol Bull*, 1934, 31 594

Since the test was not standardized on occupational groups of women, no basis for interpretation of women's scores is possible.

Results are useful in the case of those men students who want confirmation of their vocational choice, as well as those who are entirely undecided about a field of work for which to prepare It may be used as a check against the student's claimed vocational interests, which are often founded upon very superficial bases Such claimed interests are more likely to be based upon some chance factor in the environment, such as the well-meant but often inappropriate advice of parents and friends

Norms.—Weighted scores for each item have been based upon differential responses made by criterion groups composed of successful persons in the occupation The number of persons in each criterion group varied from 60 in the advertiser group to 382 engineers representing the four engineering societies The fact that differential scoring keys were possible tends to prove the truth of the old adage, "Birds of a feather flock together"

The occupations for which the blank may be scored are the following

I Science Group
- Architect
- Chemist
- Dentist
- Engineer
- Farmer
- Mathematician
- Physician
- Physicist
- Psychologist

II Linguistic Group
- *a* Advertiser
  - Journalist (newspaper editor)
  - Lawyer
- *b* Life insurance salesman
  - Real estate salesman

III Social Service Group
- *a* Minister
  - Teacher
  - Musician
- *b* Personnel manager
  - City school superintendent
  - Y M C A physical director
  - Y M C A general secretary
  - Y M C A boy's secretary
  - Boy Scout Master

IV Business Group
- Accountant
- Office clerk
- Purchasing agent
- Vacuum cleaner salesman

V Miscellaneous
- Certified Public Accountant
- Artist
- Masculinity—Femininity

A rating of A indicates that the individual has responded to the items in the same way as three-fourths of the criterion

group B indicates that the individual is similar in interests to one-fourth of the successful men in the occupation C indicates that the individual's pattern of interest resembles only 2 per cent or less of those successfully engaged in the occupation

In the case of men less than 25 years of age, there is a tendency for some scores to be lower than a subsequent score will be when interests become more matured For this reason, a small percentage of C's will later become B's and about one-fourth of the B's will become A's The reverse, however, is true of some keys

Crawford and Burnham[4] have demonstrated that with the exception of the journalist and Boy Scout Master keys, the scores on the various occupational keys are significantly different from those obtained by chance. This is further indication that the test measures likes and dislikes which are far from being random guesses

Reliability.—Two methods were used to determine the reliability of the various scoring keys Strong reports an average reliability coefficient of about + 85 (corrected) Retests of high school juniors and college freshmen after a year's interval showed that the results are more reliable in the case of the older students because of a greater relative instability of interests at the lower age levels

Validity.—Responses made by persons in different occupational groups are so different that they constitute rather distinct patterns of likes and dislikes to which responses of other men may be compared For example, 75 per cent of the criterion group of engineers made certain typical responses Only 15 per cent of the persons in other groups made similar responses, and these persons were engaged in scientific fields closely allied to engineering.

Not only do the results differentiate between persons engaged in contrasting occupations, but they distinguish between persons with different occupational choices Whereas 63 per cent of a group of non-law seniors rated C as lawyer, only 15 per cent of the law majors rated C and none of this latter group was planning to enter law

A follow-up study made by Strong of seniors at Stanford shows that upper-class students tend to continue for at least two

[4] CRAWFORD, A B, and P S BURNHAM, "The Vocational Interests and Personality Test Scores of a Pair of Dice," *J of Educ Psychol*, 1935, 26 508–512

years with occupational plans in line with their tested interests After a two-year period, 67 per cent were still planning to enter or were engaged in work in line with their first or second highest rating on the test On the basis of chance alone only 11 per cent would be so engaged [5]

A significant fact about these occupational interest ratings is that they are not influenced to any great extent by actual experience in the occupations and are often found even when students have not had any experience in a given occupation This test is, therefore, measuring a pattern of interests which precedes specific occupational experience This important point should be explained to students when they are given advice based upon the results of this test Thus it is possible to compare an inexperienced man's ratings with criterion groups composed of persons who have been engaged in the particular field of work Under-class, as well as upper-class, engineering students and engineering graduate students have patterns similar to successfully engaged engineers Apparently the test is tapping fundamental basic interests which constitute factors directing the individual towards the engineering field rather than interests resulting from experience in the field [6]

Research indicates that the fundamental pattern of interests which the individual possesses is stable But his attention may be directed toward different constellations of these interests at various times, resulting in an apparent instability of pattern This is an instability in the identification of interest pattern, rather than in the pattern itself A shift in claimed interest from engineering to law, for example, may represent only a shift of emphasis from one set of the whole array of fundamental interests to another Essentially, however, the basic patterns are stable

This fact suggests that these interest patterns are a surprisingly permanent aspect of the personality equipment of the individual Thurstone and Strong have shown that the total array of occu-

[5] This and results included herein are from Strong's manual (see reference)

[6] Dvorak, B J, "The Adjustment of Pre-Medical Freshmen to the University A Study in Vocational Guidance," M A Thesis in file in the University of Minnesota Library, Minneapolis, 1930 Rosenstein, I, "The Vocational Interest of Freshmen Engineers and a Development of a Short Method for Scoring the Strong Vocational Interest Test," M A Thesis in file in the University of Minnesota Library, Minneapolis, 1930

pational interest patterns may be boiled down to a small number of basic patterns, such as interest in science, in language, in people and in business

The greatest change in pattern of interests comes in the early years, for the most part prior to 25 years of age Changes occurring after 25 years of age are only as great as the differences in interest between the various engineering groups, which Strong has shown are so small that separate scoring keys for the several branches of engineering could not be made Differences between occupational groups far outweigh differences in interest due to age alone

A most important question arises from the use of the Interest Blank with high school and college students Are interests, as measured by this test, stable enough during later adolescence to serve as a basis for vocational counseling? This problem has been investigated by Strong and by Berman, Darley and Paterson As stated above, Strong found that there were very slight changes of interest between successive 10-year intervals from 25 to 55 years of age But there were marked changes in measured interests from the age of 15 to 25 years From this study Strong has developed an interest-maturity key by means of which a counselor may determine the extent to which a student has "the interests of 55-year-old men as compared with those of 15-year-old boys" Thus a counselor may judge whether a student's interests are "adolescent" and hence unfocused as yet

But the Minnesota study indicates that Strong's interest maturity scale actually measures not only maturity but also whether a student's interests are similar to those of men in the major professions or merely to those of men in occupations on a lower level The suggestion is made that the name be changed to an "age occupational level index"[7]

From the foregoing discussion it is clear that use of the test with high school youngsters should be tentative Considerable weight may be attached to A ratings obtained at an early age, but the fact that a 16-year-old boy receives only C ratings should

[7] Berman, I R, J G Darley, and D G Paterson, "Vocational Interest Scales, An Analysis of Three Questionnaires in Relation to Occupational Classification and Employment Status," *Bulletins of the University of Minnesota Employment Stabilization Research Institute*, 1934, III, No 5 19–23

be discounted The verdict in such a case should be, "The test has little significance as yet for your situation Better take the test again at a later age " Of course, when such a boy waits until he is 20 or so and still receives only C ratings, there is every likelihood that he will continue into adult life without developing any crystallized vocational interest patterns for the particular occupations in which he received C ratings

Publisher and Cost.—Stanford University Press, Stanford, California Prices 25 for $2, 100 for $6, 500 or more at $5 per hundred

References.—E K STRONG, JR, *Manual for Vocational Interest Blank,* Stanford University Press, 1933 E K STRONG, JR, *Change of Interests with Age,* Stanford University Press, 1931

3. Vocational Interest Blank for Women, 1935, by E K Strong, Jr

Description.—The purpose of this inventory is to ascertain the extent to which a woman's interests resemble the interests of women who are representative of various occupational and professional groups A high score does not assure success in the particular occupation, but rather indicates that, as far as interests are concerned, the woman tested resembles the average woman in the occupation The blank is similar to the blank for men and contains 410 items covering lists of occupations, amusements, school subjects, etc , to which the person responds in a way to indicate degree of interest All of these responses are then compared with those made by the average woman engaged in each occupation which has been studied so far No time limit is required, but the usual time needed is about half an hour

Designed For.—The following norms are available.

Lawyer
Librarian
Nurse
Physician
Teacher of English in high school
Teacher of mathematics and physical sciences in high school
Teacher of social sciences in high school
Teacher (in general) in high school
Artist

Author
Dentist
Life insurance saleswoman
Office worker, including bookkeeper, accountant, office manager, purchasing agent, etc
Social worker
Stenographer-secretary
Y W C A general secretary
Masculinity—Femininity

The blank should be particularly applicable to women college students considering any of the above occupations Since tested interests occasionally are quite different from claimed interests and often yield indications of unsuspected, though fundamental, patterns of characteristics, it is advisable to administer this blank, even though the individual's vocational choices are not included in the available scoring keys One should always keep in mind, however, the limitation of the test, since the scoring keys cover only a few of the large range of occupational opportunities open to women Because of certain changes with age, present interpretations of test results do not apply to girls below 15 years of age, ordinarily, the use of the test should be restricted to those 17 years of age and over Students should consider as possible fields of endeavor occupations in which they rate A or B+, and enter upon occupations in which they rate B− or C only when they are definitely assured that their other assets are sufficiently strong to counteract the fact that they do not resemble in interests persons engaged in the occupation

The blank may be found useful in making educational choices, since students can select courses in line with interest ratings to discover the types of work that will elicit maximum enthusiasm In this way, final choice of a specific course of training can be made with increased assurance of subsequent satisfaction

Norms.—At least 150 and in most cases several hundred women, employed for at least three years and representative of the occupations listed above, constitute the criterion groups An A or B+ score indicates that the individual has interests which are typical of a large percentage of these women A C rating indicates that, as far as interests are concerned, she is quite unlike most of the women in the occupation

Reliability.—The test yields fairly reliable results upon repetition Strong reports corrected odd-even reliability coefficients

ranging from 74 for the scale for life insurance saleswoman to 94 for the author scale

Validity.—Research indicates that this test actually differentiates women in the criterion groups engaged in the occupations listed above It also differentiates women engaged in the occupation from women not so engaged Women physicians are decidedly different in interests so measured from married women in general

Publisher and Cost—Stanford University Press, Stanford, California Prices 25 for $2, 100 for $6, 500 or more at $5 per hundred

References—E K STRONG, JR, *Manual for Vocational Interest Blank for Women*, Stanford University Press, 1935

B PERSONALITY, ADJUSTMENT AND ATTITUDE INVENTORIES

Inventories listed in this section range from attempts to measure such personality traits as "feelings of inferiority" and "schizoid characteristics" on the one hand and attitudes toward the school situation or toward controversial issues, such as evolution and prohibition, on the other Counselors will find one or more of these measuring instruments of value, especially if they are supplemented by other techniques in a comprehensive guidance program

A word of caution in regard to all such measures may be in order As mentioned before, the role of conscious and unconscious motivation must be taken into consideration in the interpretation of such pencil-and-paper tests (as well as in interview situations, teachers' reports, etc) We refer to the fact that the expression of symptoms may be markedly affected by motivation One of the clearest instances is reported by Hollingworth [8] The Woodworth Psychoneurotic Inventory, similar to the emotional adjustment items in the Bell Adjustment Inventory, was given to psychoneurotic soldiers who were patients in an army hospital Scores on the inventory obtained before and after the armistice were compared The hysteria patients, before the armistice, obtained a median score of 36 symptoms, whereas the median score dropped to 1 when the test was taken after the armistice Hollingworth believed that the change in symptom scores was due to a change in motivation Before

[8] HOLLINGWORTH, H L, *The Psychology of Functional Neuroses*, pp. 117–150, New York D Appleton-Century Company, Inc, 1920

the armistice, presumably, there was an unconscious desire to appear mentally ill in order to escape from duty in the front-line trenches, whereas after the armistice there was a desire to appear well in order to return to "home and mother" as soon as possible Such motivation may operate without the subject himself being aware of its presence This principle should be clearly recognized by the guidance counselor A student may "cover up" symptoms and hence the measurement will be ineffective; or the student may "exaggerate" symptoms in order to gain the solicitous attention of the counselor Hence, it is essential to establish an effective rapport between examiner and student and to persuade the student to take an objective attitude toward himself and his problems when answering items in these inventories

1. The School Inventory, by Hugh M Bell

Description.—The School Inventory consists of 76 questions concerned with a pupil's attitudes toward school life Each question in the test is answered by marking "Yes," "No," or "?" Usually fifteen minutes is ample time to complete the blank It can be given to groups or to individuals Special attention must be given to the problem of securing rapport so that students will give frank and honest answers

Pupils who make low scores tend to be well adjusted to the school situation They say they like their teachers and their classmates They feel that the school is run systematically and fairly. Students who make high scores, on the other hand, tend to be poorly adapted to the school They say they dislike their teachers and they believe the principal is unfair They are likely to want to withdraw from school.

Designed For.—The test is primarily suitable for use with high school students who have attended a particular school for at least three months If the test is used to survey the whole school population, it will help to identify those students in need of special counseling and to determine the underlying causes of dissatisfaction as a basis for readjustment work with the individual

Norms.—The following tentative norms based upon the responses of 391 high school boys and girls are available.

Type of School Adjustment	Score Range
Excellent	0– 3
Good	4–12
Average	13–30
Unsatisfactory	31–39
Very unsatisfactory	above 39

Reliability—The corrected odd-even coefficient for 242 high school students was found to be + 94

Validity.—The original test of 114 items was given to 254 students and the critical ratio between the upper and lower 15 per cent in total score was computed Nondifferentiating items were discarded.

Teachers were then asked to identify "poorly" and "well" adjusted pupils There were 71 in the "well" and 59 in the "poorly" adjusted groups The former group obtained a mean score of 14 82 (S D 10 95) whereas the mean score for the latter group was 32 25 (S D 16 45) The critical ratio of the difference between the means was 6 97, indicating that, on the average, the two groups were significantly different in their responses to the inventory

The author reports that, in one high school of over 1000 students, student members of the scholastic honorary society had a mean score of 16, in contrast to a mean score of 50 for a group of failing students

Publisher and Cost—Stanford University Press, Stanford, California, 1936 Prices 25 for $1 50, 50 for $2 75, 100 for $5, 500 for $20, 1000 for $35

References—H M BELL, *Manual for the School Inventory*, Stanford University Press, 1936

2. The Adjustment Inventory, 1934, by Hugh M Bell

Description.—This inventory consists of 140 questions dealing with behavior in the areas of home, health, social and emotional adjustments The student evaluates his own behavior by checking or encircling "Yes," "No," or "?" after each question The Inventory may be given to individuals or to groups of students, in the latter case, the examiner should read aloud a prepared statement of the general purpose of the test, why it is being given and how students can arrange to discuss the results with a counselor. In all cases, rapport must be established with

students to insure that frank and honest answers are given to all of the questions Not more than 30 to 40 minutes are required to answer all of the questions The test is scored by means of a stencil giving the weight of an item for home, health, social or emotional adjustment For each adjustment area a low score indicates satisfactory adjustment, whereas a high score indicates maladjustment The specific meaning of the scores for these adjustment areas may be listed as follows

Home Adjustment —Low scores indicate that the student feels satisfied with his home situation High scores indicate dissatisfaction with, and unhappiness in, family relationships

Health Adjustment —Low scores indicate denial of symptoms of poor health High scores indicate the need for physical examination by a physician

Social Adjustment—Low scores indicate an aggressive and dominant attitude in social relationships High scores indicate submissiveness and timidity in social contacts

Emotional Adjustment —Low scores indicate emotional balance, freedom from worries, fears and marked fluctuations in mood High scores indicate emotional instability that may be sufficiently pronounced to require psychiatric treatment

Although the fourth adjustment area is designated by the term "emotional," it is clear that emotional responses are involved to some degree in the other three areas of adjustment The following intercorrelations based upon tests given to 197 students reveal this fact.

Emotional *vs* health	53
Emotional *vs* social	47
Emotional *vs* home	38
Home *vs* health	43
Social *vs* health	24
Social *vs* home	04

Even with intercorrelations as high as these, it is apparent that different aspects of behavior are being measured with social adjustments and home adjustments being highly independent of each other

Designed For.—The test was standardized on high school and college students, both men and women The Inventory may be used as a means of identifying those students who need to

see a counselor and would profit from discussing with him their evaluation of their own behavior It may be given as a part of a test battery administered to all students at the beginning of the school year or to students at the time they seek an interview with a counselor In the first case, the total scores may be used as indications of counseling needs on the part of certain students who should be *invited* to see the counselor

Norms —The following norms are available for interpreting the scores·

Adjustment areas	High school score range		Description	College score range	
	Men (161)	Women (190)		Men (171)	Women (243)
Home	0–1	0–2	Excellent	0–1	0–1
	2–4	3–5	Good	2–4	2–4
	5–9	6–13	Average	5–9	5–9
	10–16	14–20	Unsatisfactory	10–16	10–15
	Above 16	Above 20	Very unsatisfactory	Above 16	Above 15
Health	0–1	0–1	Excellent	0–1	0–1
	2–4	2–4	Good	2–4	2–4
	5–9	5–11	Average	5–11	5–9
	10–15	12–16	Unsatisfactory	12–16	10–15
	Above 15	Above 16	Very unsatisfactory	Above 16	Above 15
Social	0–4	0–4	Excellent	0–3	0–3
	5–9	5–10	Good	4–7	4–8
	10–20	11–21	Average	8–17	9–19
	21–26	22–30	Unsatisfactory	18–25	20–28
	Above 26	Above 30	Very unsatisfactory	Above 25	Above 28
Emotional	0–2	0–3	Excellent	0–2	0–3
	3–5	4–8	Good	3–5	4–7
	6–11	9–18	Average	6–13	8–15
	12–18	19–24	Unsatisfactory	14–19	16–21
	Above 18	Above 24	Very unsatisfactory	Above 19	Above 21
Total score	0–12	0–15	Excellent	0–9	0–12
	13–24	16–31	Good	10–22	13–24
	25–44	32–57	Average	23–41	25–47
	45–60	58–74	Unsatisfactory	42–60	48–65
	Above 60	Above 74	Very unsatisfactory	Above 60	Above 65

Reliability.—The corrected odd-even reliability coefficients given below were computed by Bell for the tests of 258 college freshmen and juniors.

Home adjustment	89
Health adjustment	80
Social adjustment	89
Emotional adjustment	85
Total score	93

Turney and Fee[9] report the following results of correlating the scores on the Adjustment Inventory given twice, at an interval of 6 months, to 78 high school students

Home adjustment	85
Health adjustment	74
Social adjustment	83
Emotional adjustment	79
Total score	82

Validity.—Five methods of construction, standardization and validation were used by the author to select the final 140 questions from an original list of 411 questions First, questions were included which differentiated between the upper and lower 15 per cent of the distribution of scores for each category Second, only items which were checked by at least 25 per cent of the maladjusted group were retained Third, items which were misunderstood by students (as indicated by penciled-in question marks) were eliminated Fourth, the various items were used over a period of 2 years in personal interviews with 400 college students to make certain that they were eliciting the proper responses Fifth, the section total scores were used to differentiate "well-adjusted" and "poorly adjusted" students in each area, as selected by high school and college counselors and administrators independently of the test results The critical ratios of the differences between the mean scores obtained by these extreme groups are as follows:

Home adjustment	7 02
Health adjustment	6 58
Social adjustment	5 52
Emotional adjustment	5 32

[9] Turney, A H, and Mary Fee, "An Attempt to Use the Bell Adjustment Inventory for High School Guidance," *School Rev*, 1936, 44 193–198.

Bell reports the following correlation of sections of the Inventory with other personality tests

Personality tests	Group	Corrected coefficient
Allport *vs* social adjustment	46 men	72
Allport *vs* social adjustment	50 women	81
Thurstone Schedule *vs* emotional adjustment	96 men and women	93
Thurstone Schedule *vs* total score	96 men and women	94
Bernreuter B4-D ("Social Dominance") *vs* social adjustment	39 men and women	90

Publisher and Cost—Stanford University Press, Stanford, California, 1934 Prices 25 for $1 75, 50 for $3, 100 for $5 50, 500 for $25, 1000 for $40

References—H M BELL, *Manual for the Adjustment Inventory*, Stanford University Press, 1934, H M Bell, *The Theory and Practice of Student Counseling*, Stanford University Press, 1935

3. The Minnesota Inventories of Social Attitudes, by E G Williamson and J G Darley, 1937

Description.—Form *P*, *Inventory of Social Preferences*, includes questions measuring preferences of a student with reference to the extent and type of social relationships desired It measures these preferences on a continuum extending from a desire to restrict one's social relationships to a very few contacts, to the opposite extreme of the desire to experience relatively unrestricted social contacts The latter extreme of the continuum is characteristic of those persons who "like people in general"

Form *B*, *Inventory of Social Behavior*, includes questions which sample estimates of a student's own behavior and his feelings in social situations.

Each item has the following five possible answers, which are printed on the test almost always, frequently, occasionally, rarely, almost never Not more than 15 to 20 minutes are required to answer all questions on either form

The tests were given to 500 college men and to 500 college women Each item or question was then analyzed in terms of the extent to which it differentiated between the highest one-third of

the group in total score and the lowest one-third. These item differentials were usually high, ranging from 1 93 to 20 92 for Form *P*, and from 1 56 to 19 27 for Form *B* About half the items yielded differentials greater than 10 00 in value, only five were below 3 00

Each form is scored by giving a weight to the student's answer, these weights being printed on the test itself No scoring stencil is required

Designed For.—These two forms are to be used with college students It is obvious that tests of this type are as necessary in the field of social adjustment as are mental tests in dealing with problems of scholastic adjustment

SOCIAL PREFERENCE SCORES BY CLASS AND SEX

Class	Men			Women		
	Number	Mean	Standard deviation	Number	Mean	Standard deviation
Freshmen	378	129 60	22 21	245	145 12	18 62
Sophomores	427	129 01	22 35	244	141 52	22 21
Juniors	284	129 09	22 13	181	139 37	20 36
Seniors	223	129 40	21 27	165	137 36	20 92
Graduate students	88	120 91	23 09	45	128 56	20 13
Total	1400	128 61	22 14	880	140 63	20 95

SOCIAL BEHAVIOR SCORES BY CLASS AND SEX

Class	Men			Women		
	Number	Mean	Standard deviation	Number	Mean	Standard deviation
Freshmen	378	133 41	22 17	245	136 10	21 74
Sophomores	427	133 67	22 38	244	131 23	23 46
Juniors	284	135 60	22 75	181	132 57	22 39
Seniors	223	136 44	24 20	165	132 64	22 80
Graduate students	88	132 84	24 47	45	127 00	26 13
Total	1400	134 38	22 87	880	132 90	22 94

The *Inventories* may be used in the following ways

1 In school or class surveys, to identify students needing personal and social guidance.

2 To check teachers' observations and judgments of social inadequacy.

3. In counseling, to provide leads for locating, diagnosing, and treating problems of emotional and social relationships

4 In research, to determine the relationships with other personality tests and to make factor analyses of test items and total scores

5 To compare groups, classes, sexes and colleges with regard to the social characteristics of students

Norms.—The two forms of the Inventory were given to 2280 students in the University of Minnesota (1400 men and 880 women) The table on page 190 gives, for each test, the mean scores and sigmas of the distributions of students classified by sex and college classes [10]

Abbreviated norms, derived from the test scores of the same 2280 college men and women are as follows

	Raw score on Form *P*	Raw score on Form *B*
Highest score	190	200
Q_3 (75th percentile)	149	149
Median	135	135
Q_1 (25th percentile)	118	118
Lowest score	80	80

Reliability.—The corrected odd-even reliability of each form was computed separately for 500 men and 500 women and is given below.

Forms	Men	Women
Form *P*—social preferences	+ 90	+ 91
Form *B*—social behavior	+ 92	+ 91

[10] Williamson, E G, and J G Darley, "The Measurement of Social Attitudes of College Students, I Standardization of Tests and Results of a Survey," *J of Soc Psychol*, 1937, 8 219–229.

Intercorrelations.—The correlation of Form *P* with *B* for 1400 college men was + 47 and for 880 college women was + 44 The correlation of Form *P* with the American Council on Education Psychological Examination, 1935 form, is + 16 for men and – 11 for women The corresponding correlations for Form *B* and the same intelligence test are + 23 and –.10 The correlation of Form *P* with first quarter college grades is – 10 for men and – 04 for women The corresponding coefficients for Form *B* are + 06 and + 03 [11] Evidently both forms measure factors unrelated to academic intelligence and achievement and, therefore, should be used in research and guidance activities which are not dependent upon or directed toward the criterion of scholarship

Validity.[12]—The two forms were validated in the following ways.

1 *"Well" versus "Poorly" Adjusted Students*—From a sampling of 2280 anonymous questionnaires filled out by college students, 200 "well" adjusted and 200 "poorly" adjusted students were selected for study The selection was made on the basis of the number and type of organized and informal social activities in which these students participated and found enjoyment, the amount of money and time devoted to social activities, the number of acquaintances made in college; and recorded expressions of the student's satisfaction or dissatisfaction with his own social life

The following critical ratios (D/σ Diff) were found for the differences between the mean scores of the two groups on the two forms

Forms	Critical ratios	
	"Well" *vs* "poorly" adjusted men	"Well" *vs* "poorly" adjusted women
Form *P*—social preferences	9 69	6 21
Form *B*—social behavior	8 94	9 60

[11] From an unpublished study by E G Williamson, based on the test scores of 827 college freshmen

[12] WILLIAMSON, E G, and J G DARLEY, "The Measurement of Social Attitudes of College Students, II Validation of Two Attitude Tests," *J of Soc Psychol*, 1937, 8. 231–242.

2 *Fraternity versus Non-fraternity Students*—Since members of fraternities are usually the more socially inclined members of the student body the two forms were applied to determine to what extent they differentiated students affiliated with fraternities from those not affiliated The following critical ratios were found between the group means for men and women on the two forms of the Inventory

Forms	Critical ratios	
	Fraternity *vs* unaffiliated men	Sorority *vs* unaffiliated women
Form *P*—social preferences	6 56	2 53
Form *B*—social behavior	4 76	2 56

3 *Additional Indications of Validity*—Other indices of validity are reported elsewhere by the authors Some of the indices may be summarized briefly as follows The critical ratio for men on Form *P* between those spending less than $5 per college quarter on social activities and those spending over $25 was 7 72, the ratio for women was 4 86. The corresponding ratios for Form *B* were 7 96 and 3 77 The critical ratio for students on Form *P*, classified by reports on an increase versus a decrease in amount of college social activities, was 3 07 for men and 3 83 for women The corresponding ratios for Form *B* were 1 52 and 1 41

Publisher and Cost—The Psychological Corporation, 522 Fifth Ave, New York, 1937 Prices 1 to 100 copies of either test for $0 05 each, 100 to 500 for $0 045 each, over 500 for $0 04 each

References—E G WILLIAMSON and J G DARLEY, *Manual for the Minnesota Inventories of Social Attitudes*, Psychological Corporation, 1937, E G WILLIAMSON and J G DARLEY, "The Measurement of Social Attitudes of College Students, I Standardization of Two Tests and Results of a Survey," *J of Soc Psychol*, 1937, 8 219–229, E G WILLIAMSON and J G DARLEY, "The Measurement of Social Attitudes of College Students, II Validation of Two Attitude Tests," *J of Soc Psychol*, 1937, 8 231–242

4. Minnesota Scale for the Survey of Opinions, 1936, by E A Rundquist and R F Sletto

Description—This scale of 132 items, each with five expressions of degree of agreement, is designed to measure attitudes and

opinions indicative of morale, feelings of inferiority, family relationships and adjustment, respect for and enforcement of law, economic conservatism, the value of education and general adjustment Between 30 and 40 minutes are required to answer all of the questions Each of the first six traits or attitudes is measured by 22 different items arranged in serial order General adjustment is measured separately by means of 16 items included among the items comprising the six scales Each of the seven scores is found by using a special tabulation sheet (equivalent to a stencil for each scale) which identifies the items for each scale The weights for the answers to each item are printed on the test itself

Designed For.—The scale was standardized on 1000 young people, 500 of each sex Included in the standardization group were 400 college students, 200 high school seniors and 400 young employed or unemployed persons registered in adult education classes in high schools Counselors may identify students who are atypical and who may need special counseling concerning attitudes. These scores are indicative of actual or potential maladjustments The scale may also be used for surveys of students and adults or for research studies

Norms—The following norms were derived from the raw scores of 827 arts college freshmen of 1935 in the University of Minnesota [13]

	Morale	Inferiority	Family	Law	Economic conservatism	Education	General adjustment
75th percentile	47	56	47	49	56	39	32
Median	52	63	52	54	62	45	36
25th percentile	57	69	58	59	68	49	39

[13] From an unpublished study by E G Williamson The authors of the test arranged scores so that a higher score indicated a greater amount of the trait In the norms given here, the scores have been reversed, in line with the usual practice of indicating the "favorable" end of the distribution by a high percentile rank Therefore, a high percentile rank indicates a "favorable" attitude and a low percentile indicates an "unfavorable" or "undesirable" attitude

Reliability.—The corrected odd-even reliability coefficients for the standardization group are as follows

Traits	500 men	500 women
Morale	79	81
Inferiority	78	82
Family	83	88
Law	84	82
Economic conservatism	85	82
Education	82	83

The following test-retest coefficients are reported by the authors for the time interval of two months

Traits	70 men	75 women
Morale	72	61
Inferiority	81	77
Family	83	78
Law	78	78
Economic conservatism	86	82
Education	84	85

These coefficients indicate that too much dependence should not be placed upon some of the single scales The reliability of these scales could probably be improved by increasing the number of items

Validity.—The authors of the scale have determined its validity by means of (1) statistical item analysis and (2) by comparing the scores, on each separate scale, of various groups classified as to certainty of maintaining or obtaining employment, overageness or retardation in school, amount of previous education, occupation of parent, home conditions, including residence of students in their home, separation or divorce of parents, and unemployment of father and mother, employment status of the standardization group, and other variables

Additional Data.—For a small group of students, the authors report the percentages of identical responses on all scales, and the percentage of shifts of more than one position (on a five-step response pattern) in test and retest of the same students Data

are also presented showing the stability of the quartiles for test and retest and showing the coefficients of correlation for individual items of each scale

The intercorrelations between the scores on the different scales vary from + 08 to + 53 In general, there is a low positive correlation between the scales, those between the morale scales and the others being the highest for both men and women

Negligible correlations exist between scores on the seven scales and college grades or intelligence as measured by the Psychological Examination of the American Council on Education as shown in the following table [14]

Traits	454 college freshman men		373 college freshman women	
	Grades	A C E test	Grades	A C E test
Morale	09	10	− 005	04
Inferiority	− 04	04	− 05	04
Family	10	− 05	− 05	− 14
Law	06	02	− 09	− 11
Economic conservatism	− 05	03	− 14	− 01
Education	12	02	08	05
General adjustment	08	09	− 02	03

Publisher and Cost—University of Minnesota Press, Minneapolis, Minnesota Prices single copy for $0 10, 25 for $1 50, $5 per hundred

References—E A RUNDQUIST and R F SLETTO, *Personality in the Depression, A Study in the Measurement of Attitudes*, Minneapolis University of Minnesota Press, 1936

5. Personality Sketches, 1936, by J B Maller

Description.—The Personality Sketches consist of 100 cards, on each of which is printed one test question The subjects sort the cards into two boxes, one labeled, "Yes, I am the same," and the other, "No, I am different" Form *A* consists of questions on personal adjustment (neurotic tendencies) Form *B* measures social adjustment (delinquency tendencies) The test is administered individually without time limit, 10 minutes for both forms is adequate for high school pupils

[14] From an unpublished study by E G Williamson

Designed For.—The test is suitable for pupils in grades five through twelve, and is used to diagnose mild forms of maladjustment

Norms—The author provides tentative norms for both forms for a group of 302 sixth-grade pupils

Reliability.—The odd-even reliability of the total score (Form *A* plus Form *B*) was + 91 for 190 sixth-grade children It is obvious that both forms should be given

Validity.—Each item was correlated (biserial *r*) with the total score of the preliminary form and only items with an *r* of 40 or more were retained The author summarizes evidence of external validation as follows

1 The critical ratio exceeds 3 5 for the difference in mean scores of 302 sixth-grade pupils and 188 probation school pupils of the same age

2 A similar ratio was found for normal adults and psychiatric patients

The author concludes that "the clinician will find the responses to the individual items much more significant than the total score" The differentiating value of each item of the test was computed for the following groups

Delinquent *vs* nondelinquent Negro boys

Delinquent *vs* normal boys

Young inmates in a prison *vs* normals

Problem boys in a probation school *vs* normal boys of the same age

Children rated "very social" by teachers *vs* those rated "very asocial" by teachers

Publisher and Cost—The Psychological Corporation, 522 Fifth Ave, New York Price, $1 75 per set of cards and box

References.—J B MALLER, *Personality Sketches, Manual of Directions*, 1936, published by the Psychological Corporation, 522 Fifth Ave, New York; C LANDIS, J ZUBIN and S E KATZ, "Empirical Evaluation of Three Personality Adjustment Inventories," *J of Educ Psychol*, May, 1935

6. Humm-Wadsworth Temperament Scale, 1934, by Doncaster G Humm and Guy W Wadsworth, Jr

Description.—The authors define their purpose in developing this test as follows "To analyze temperamental mechanisms which underlie the characteristic reactions of a person to his environment and to other people; the effect upon behavior

of emotionality, self-interest, harmony or disharmony with environment and similar factors."[15]

The scale consists of 318 questions, each designed to permit the measurement (analysis) of traits (components) of temperament and to permit the identification (diagnosis) of the components which appear to predominate in the temperamental make-up of a given subject. Rosanoff's theory of personality provides the basis of the scale and the diagnosis of individuals according to the following components: (1) "normal", (2) hysteroid; (3)

Profile scores	Raw scores						
	Normal	Hysteroid	Cycloid manic	Cycloid depressed	Schizoid autistic	Schizoid paranoid	Epileptoid
Strong							
+3	55–	72–	42–	66–	66–	38–	52–
+2	46–54	56–71	35–41	56–65	59–67	32–37	44–51
+1	40–45	51–55	29–34	44–55	46–58	30–31	37–43
Borderline							
0	35–42	38–50	22–28	34–43	38–45	24–29	29–36
Weak							
−1	30–34	30–37	20–21	25–33	28–37	22–23	24–28
−2	23–29	20–29	13–19	15–24	20–27	13–21	16–23
−3	0–22	0–19	0–12	0–14	0–19	0–12	0–15

cycloid (*a*) manic phase, (*b*) depressed phase, (4) schizoid (*a*) autistic phase, (*b*) paranoid phase, (5) epileptoid. There are, therefore, seven scores derived for each individual. The scores are classified for each type as "strong" (+1 to +3), "borderline" (0), or "weak" (−1 to −3) with the range of total scores for each group being provided in the authors' manual.

Designed For.—The test should be used with adults (including college students over 18 years of age) with I.Q.'s over 90.

This scale may be used by counselors with professional training in abnormal psychology to identify the temperament components of an individual. It is to be expected that an individual will have more than one component. After identifying these components, a counselor should seek the assistance of psychiatrists

[15] HUMM, D. G., and G. W. WADSWORTH, JR., "The Humm-Wadsworth Temperament Scale," Preliminary Report, *Personnel J.*, 1934, 12: 314–323.

in checking the results of testing and in treating the subject should the test scores indicate the probability of mental pathology

No time limit is set but subjects usually require from 30 to 90 minutes, the average time required is 55 minutes The answers are written by the subject and the test may be given individually or to a group of subjects

Norms.—The table on page 198 shows norms for this test

Reliability.—The split-half corrected reliability coefficients (presumably for the standardizing group of 436 subjects) are of the following magnitudes.

Normal	82
Hysteroid	85
Cycloid manic	73
Schizoid autistic	88
Schizoid paranoid	70
Epileptoid	75

These reliability coefficients fail to meet the usual standards for individual diagnosis, hence interpretations of obtained test scores must be made with larger reservations

Validity.—The total scores of the scale were validated for the standardizing group of 436 cases by correlation with case studies and clinical records The coefficient of validity, with biased scales eliminated, was 999 With a second group of subjects the validity coefficient was 81; with biased scales eliminated, this coefficient becomes 98 Most psychologists would be inclined to question the objectivity of a validation method which produces validity coefficients of +.98 to + 999

Out of some 2000 test questions devised by the authors, 450 were tried out on 436 subjects of known temperamental characteristics Hysteroid subjects were selected from criminals in a state prison Cycloid, schizoid and epileptoid subjects were selected from inmates of state hospitals for the insane. Some cases of epilepsy came from homes for indigents or were private patients "Normal" subjects were selected from "company employees and other individuals, actually adjusted to employment or other pursuits, and whose case studies revealed no evidence of psychopathic tendencies. "[16]

Each item in the scale was validated by the following method

[16] HUMM, D G, and G W WADSWORTH, JR, "The Humm-Wadsworth Temperament Scale," *Amer J. of Psychiatry*, 1935, 92· 163–200

These questions were arranged according to the component each represented A distribution of scores made in each component by subjects whose mental examinations evidenced a strong degree of that component was compared with a contrasting distribution of scores made by subjects in whom the component was found to be weak or virtually absent [17]

The total scores of the standardizing group were used in similar manner to differentiate subgroups with known components

The authors, noting the tendency of some subjects to answer with too many "yes" or "no" responses, have devised a correction If the number of "no" responses falls between 138 and 196, the scale has been "acceptably taken " If the number is less than 138, the subject is given a colored pencil and told to circle the "yes's" concerning which he is doubtful; these are then counted as "no" responses If the count is above 196, then a similar procedure is followed for marking the doubtful "no's" which are then counted as "yes" responses

The senior author of this scale has generously supplied us with the following correlations (corrected for rectilinearity) computed on 1012 unselected cases

Subject tested	I Q	Age
Normal	19	25
Hysteroid	− 47	− 21
Cycloid manic	08	− 11
Cycloid depressed	04	− 10
Schizoid autistic	− 05	− 10
Schizoid paranoid	− 09	− 19
Epileptoid	− 33	15

Publisher and Cost—Published by Doncaster G Humm, 157½ North Kenmore Ave, Los Angeles, California Prices 25 for $2 50, specimen set for $0 50; report of research for $0 50 Also distributed by the Psychological Corporation

References.—D G Humm and G W Wadsworth, Jr, "The Humm-Wadsworth Temperament Scale," Preliminary Report, *Personnel J*, 1934, 12 314–323, D G Humm and G W Wadsworth, Jr, "The Humm-Wadsworth Temperament Scale," *Amer J of Psychiatry*, 1935, 92 163–200, D G Humm and G W Wadsworth, Jr, "The Humm-Wadsworth

[17] Humm, D G, and G W Wadsworth, Jr, "The Humm-Wadsworth Temperament Scale," *Personnel J*, 1934, 12 314–323

Temperament Scale," *Manual of Directions*, 2d ed , published by Doncaster G Humm, 157½ North Kenmore Ave , Los Angeles, California, 1934

7. Specific Attitude Scales, by L L Thurstone and Associates

Thurstone and his associates have constructed a large number of attitude tests using a psychophysical method of item analysis and scale construction These scales have high reliability, despite the small number of items

Not more than 15 or 20 minutes are required of students to check the answers Each item of these tests has been scaled and located by statistical methods on an attitude continuum of eleven steps The final score is the scale value of the mid-question checked by the student This is in contrast to most of the other tests described in this chapter, in which all questions receive equal weight and are summed to get a total score, which is transmuted into sigma or percentile units

The following scales are available for measuring attitudes toward

The Church	Evolution	The Bible
War	Treatment of criminals	Capital punishment
The Negro	Patriotism	The Chinese
Prohibition	The Constitution	The Germans
Communism	Birth control	Sunday observance
Censorship	God	The Law

Counselors will have frequent occasion to utilize this type of measurement Students contemplating the ministry as a vocation, for example, might well be persuaded to take several of the Thurstone scales to provide a clue as to the nature and type of theological training that would be appropriate Students who exhibit an adjustment problem in the religious area, such as religious conflict, might be asked to take several of the scales as a point of departure in identifying more accurately present attitudes Situations in which attitudes toward other races and nationalities is an important factor might be handled far more intelligently by counselor and student if accurate knowledge of the relevant attitudes is available Counselors will also find the scales of value in dealing with group situations in the school as a means of measuring the effects on student attitudes of particular courses, programs, etc , inside and outside of the school In short, the availability of these scales opens up a new

approach to student personnel problems falling in the area of social psychology and social control

Publisher and Cost.—University of Chicago Press, Chicago, Illinois The price varies with the scales

References.—L L THURSTONE and E J CHAVE, *The Measurement of Attitudes*, Chicago University of Chicago Press, 1929 Also, see Annual Subject Index in *Psychological Abstracts* for specific references

8. Generalized Attitude Scales, 1934, by H H Remmers and Associates

H H Remmers and his associates[18] have developed a new type of attitude test upon the principle of generalized statements which may be used to measure attitudes toward a variety of situations within a given attitude continuum For example, a test composed of such items as "Is the most admirable of institutions," may be used to measure attitudes (upon separate administration of the test) toward any college or class of a university, any student activity, etc , etc Scales have been constructed to measure (1) attitude toward any institution, (2) attitudes toward defined groups (*e g* , racial groups), (3) attitude toward any homemaking activity, (4) attitude toward any practice (*e g* , Sunday observance, drinking, petting, methods of discipline, etc); (5) attitude toward any occupation, (6) attitude toward any school subject; (7) attitude toward teaching, (8) attitude toward any teacher; (9) attitude toward any existing or proposed social action, and (10) attitude toward any dramatic production, etc Two equivalent forms were constructed for each scale

Each of the scales has been constructed by means of the Thurstone technique, in which each item receives a scale value between 1 and 11. A student's score on the test is, therefore, a position or point on the scale of 11 points, this score is found by identifying the mid-scale value of all items checked by the student

The use of these generalized attitude scales is greatly simplified in comparison with the Thurstone scales so far as scoring is concerned, because the statements are arranged in order of their scale values Not only does this arrangement make it easier to locate the mid-scale value, but it also permits the scoring clerk

[18] "Studies in Higher Education XXVI," directed and edited by H H Remmers, *Bull of Purdue University*, 1934, Vol 35, No 4

to note more readily consistency or inconsistency of a given student's attitude. Not only is the scoring simplified, but the time for taking one of these attitude tests is minimal—not more than 2 or 3 minutes being required

The generalized attitude scale toward any occupation or vocation will be of especial interest to the vocational counselor Examples of favorable statements are "I'd rather work at this occupation than eat," "This is the ideal vocation for a lifework" Examples of neutral statements are. "This job is all right when no others are available," or "I enjoy only parts of this work" Examples of unfavorable statements are "This is the worst occupation in the country," "I would refuse this work even if I were starving" In all there are 45 statements in Form *A* and an equal number in Form *B*

The reliabilities of the attitude scores for this scale vary somewhat according to the specific occupation being rated Correlations between forms *A* and *B* for four vocations are reported to be + 76 for the ministry; + 79 for homemaking, + 84 for high school teaching, and + 85 for engineering The corrected reliabilities for forms *A* and *B* together range from + 87 to + 92 A total of 429 college sophomores in agriculture, home economics, engineering, science, pharmacy, and industrial education were used as subjects Reliabilities for this same scale when used with high school students also vary in accordance with the particular occupations being measured, but in general they are lower (+ 47 to + 77) This fact suggests that the attitudes of high school youngsters toward any particular occupation are far less crystallized and systematized than are the attitudes of college sophomores who have already selected their vocations

As one would expect, there is a high degree of specificity of attitude toward different occupations The correlation between attitudes toward the ministry and toward engineering approximates zero The same is true for homemaking and high school teaching and for engineering and high school teaching There is a slight positive correlation (from + 37 to + 46), however, between ministry and high school teaching These results suggest that attitude patterns will emerge as these scales are used with various groups

Engineering students exhibit a most favorable attitude toward engineering as a vocation (mean score 8 31 ± 05), whereas these

same students exhibit a somewhat negative attitude toward the ministry as a vocation (mean score 4 58 ± 09) In fact the difference is so marked that the most favorable attitude toward the ministry is only slightly above the least favorable attitude toward engineering

In general, Remmers and his research associates have shown that these generalized attitude scales are reliable and valid measuring instruments that will be helpful in surveys of student populations, in measuring vocational attitudes in courses in occupations, and in educational, vocational and social counseling

Publisher and Cost.—All of the generalized attitudes are copyrighted by Purdue Research Foundation under the directorship of Mr G Stanley Meikle Permission to reproduce these scales should be obtained from Director Meikle

References.—H H REMMERS, *et al*, "Studies in Attitudes," *Bull of Purdue University*, 1934, Vol 35, No 4, pp 1–112, H H REMMERS, *et al*, "Further Studies in Attitudes, Series II," *Bull of Purdue University*, 1936, Vol 37, No 4, pp 1–298

CHAPTER VIII

SPECIAL APTITUDE TESTS

Actually, the "special aptitude" tests described in this chapter have characteristics in common with other types of tests already described. They are not pure measures of "special" aptitude since they also measure the "general" trait of academic intelligence. Likewise, they are no more measures of special "aptitude" than some of the so-called "achievement" tests which clearly are designed to determine the degree to which the individual has retained information once learned. They deserve the label only on the ground that their purpose is the measuring of some element of an ability which is related to subsequent success but which has not yet been subjected to extensive formal training.

No claim is made for completeness in listing and describing such tests. There are other promising tests which might have been included here. For example, the Seashore Motor Skills Unit is one which should at least be mentioned. Its cost, however, would prohibit its use in many school guidance projects. The additional fact that industrial operations requiring these particular special abilities have not yet been located limits its practical usefulness at the present time. The O'Rourke and Detroit mechanical tests and the Lewerenz art test, along with a number of others, have been omitted, although for some purposes these tests may be better than some of the tests chosen for treatment.

The inclusion of a given test does not prove that it is a model instrument. Some are included in lieu of better measures and others appear to have potentialities for practical application, provided additional research is completed. The discussion should aid the counselor in selecting those which may best serve his purpose. It goes without saying that the counselor should interpret the results with caution and insight into their limitations.

A. CLERICAL APTITUDE TESTS

1. Minnesota Vocational Test for Clerical Workers, 1931, by Dorothy M. Andrew and Donald G. Paterson

Description.—The short form of this test consists of two parts, a number-checking test, and a name-checking test. Each part contains 200 paired items, one-half of which are exactly the same and the other half of which are different. The speed and accuracy with which the individual can detect the differences in the series of paired numbers and paired names are measured directly. The test requires 15 minutes of working time. Both the number- and name-checking tests should be administered, since in some persons these two abilities are relatively discrete. Usually individuals obtain similar percentile ratings for the two parts, however, because of the rather high relationship between them. The correlation between number checking and name checking was found to be +.77 for 63 sophomore college students.

Designed For.—The test may be administered to men and women of all ages, although at the present date norms have been published only for adult groups. Age and grade norms for students in the junior and senior high schools are now being compiled. That will extend the usefulness of this guidance tool to include the ages in which evidence regarding the aptitudes for commercial training is most needed. These test results should be used to supplement other information regarding the individual who is considering entrance upon clerical training. Clerical success should not be predicted by this information alone, but when used as a part of the clinical picture it will be of definite value in guiding away from clerical training those individuals whose chances for profiting from this type of experience are limited. Persons considering clerical work of any kind or related types of occupations involving clerical detail should be given the test, preferably in combination with a measure of general intelligence, interests, and personality inventories. When only one test can be resorted to, the authors advise the use of the name-checking test, since this measures general intelligence to some extent also.

Employers interested in the clerical potentialities, as well as the present accomplishments of applicants, would find the clerical scores enlightening.

Norms.—Percentile norms are now available for men and women representing an occupationally unselected group, as well

Norms for Men in Clerical Occupations

Number tested	Groups	Mean score: Numbers	Mean score: Names	Median percentile: Numbers	Median percentile: Names
29	Accountants and bookkeepers	144	127	97	93
17	Bank tellers	137	134	95	95
44	General clerical workers	134	131	94	94
31	Minor bank officials	125 6	118 9	91	88
30	Routine clerical workers	124	118	91	88
27	Miscellaneous minor executives	116 1	120 9	87	90
59–60	Life insurance salesmen	108 7	107 7	81	80
86–85	Retail salesmen	108 6	101 1	81	74
18	Draftsmen	107 8	97 8	80	72
23	Shipping & stock clerks	104	102	77	76
171	Manual training teachers	102 8	97 2	75	71
124	Policemen	94	86 1	66	58
101	Garage mechanics	85 6		54	
59–36	Ornamental iron workers	80 2	78 9	51	47
118	Casual laborers	61 9		24	

Norms for Women in Clerical Occupations

Number tested	Groups	Mean score: Numbers	Mean score: Names	Median percentile: Numbers	Median percentile: Names
21	Office machine operators	149	134	86	72
181	Stenographers—typists	147	158	85	90
60	General clerical workers	139	147	80	84
24	Routine clerical workers	133	134	76	73
317	Nurses	117	124	60	64
137	Retail saleswomen	108 6	103	48	41

as for men and women representative of the clerical population and special clerical occupations Because of sex differences, an individual's test scores should be referred to his particular sex

norm, unless he is competing with workers of the opposite sex, in which case it is desirable to use those percentiles also in the interpretation

Complete norms may be found in the test manual and in the Employment Institute Bulletins listed in the references A sample of the norms given in the table on page 207 is included to indicate the differences between men and women, between gainfully occupied persons in general and those in clerical work, and between persons engaged in different types of clerical work These differentiations substantiate the claim for the validity of the test

Reliability.—The consistency of this clerical aptitude test compares well with some of the best intelligence tests The reliability for the short form taken as a whole test for 138 employed clerical workers was + 90, and when 48 University of Minnesota business students were retested with the same test the correlation was + 85 The corrected split-half coefficient of reliability for the number-checking test was + 85 and for the name-checking test, + 89

Validity.—A number of indications of the test's ability to measure that which it claims to measure may be pointed out The differential occupational ratings, samples of which are found above in the discussion on norms, provide evidence not only that the test differentiates the clerical from the general population but that different occupational groups in the clerical field form a hierarchy with respect to average clerical test scores

When clerical scores were related to supervisors' ratings of employed clerical workers, there was some indication that the test could be used to predict efficiency on the job, but the true relationship is obscured by the unreliability of the ratings. The correlations obtained for different groups numbering from 22 to 97 ranged from + 28 to + 42

It appears that success in commercial courses, as rated by teachers, may be predicted better by this test than success on the job When a group of over 100 vocational high school students were rated by their teachers, the correlation with test scores was + 58 The correlation between intelligence test scores and the ratings for this same group was + 43, showing that the clerical test alone would have given a better prediction of success in the training course than the intelligence test When

both are used, however, the correlation rises to + 66, showing the value of combining test evidence in building up a clinical picture of the student before training suggestions are given

In a group of 167 university accounting students only one student with a percentile score below 41 on the number-checking test and no students with a percentile score below 51 on the name-checking test received an A or B grade in the course

Additional confidence in the test's validity is furnished by the fact that it correlates to the extent of + 71 with "The Scott Company Test for File Clerks" We feel that the Minnesota test is superior to the Scott Company test, which is more influenced by the factor of verbal intelligence The correlation with intelligence is only + 23 for different homogeneous groups of students and employed clerks For very heterogeneous groups, however, this relationship rises to + 47 for number checking and + 65 for name checking

The description, clerical aptitude, is not a misnomer, for, as the authors point out, there is a small negative relationship between abilities measured by this test and age and years of clerical training, and a very slight relationship with amount of clerical experience Retests after 5 months of commercial training showed that training itself does not improve test scores

Publisher and Cost—The Psychological Corporation, 522 Fifth Ave, New York Prices $3 per hundred, including manual and key; sample set for $0 25

References—D M Andrew, "An Analysis of the Minnesota Vocational Test for Clerical Workers," Ph D Thesis, University of Minnesota 1935, D M Andrew and D G Paterson, "Measured Characteristics of Clerical Workers," *Bulletins of the Employment Stabilization Research Institute*, 1934, Vol III, No 1, Minneapolis University of Minnesota Press, D M Andrew and D G Paterson, "Minnesota Vocational Test for Clerical Workers," *Test Manual*, The Psychological Corporation, 1933, Millicent Pond, "What Is New in Employment Testing?" *Personnel J*, 1932, 11 10–16

2. **Other clerical aptitude tests** (O'Connor, O'Rourke, Thurstone) are on the market and will be found useful in counseling and research The best single reference to a discussion of clerical aptitudes is W. V Bingham's *Aptitudes and Aptitude Testing*, Chapter XII, The Field of Clerical Occupations, and Appendix V, Tests of Clerical Aptitudes

B. ART TALENT TESTS

1. Art Judgment Test, 1929, by N C Meier and C E Seashore

Description.—The most significant index to art talent, aesthetic judgment or "the capacity for perceiving quality in aesthetic situations relatively apart from formal training" is revealed according to the originators, by the responses which the individual makes to these test items It is not measuring creative ability, but rather, art appreciation It is likewise not measuring other capacities and skills which together constitute that complex called "art talent" The authors contend, however, that the test is measuring "art judgment," which is the most important single factor in this galaxy, and that it is indispensable to one considering art as a career, more to be desired than initial ability to handle the brush or the art tools with skill The authors state that scores made on this test will enable counselors to obtain a quantitative basis for predicting the extent to which persons may expect to progress in art

The equipment consists of a booklet of 250 pictures, arranged in pairs, which differ in one respect These differences are pointed out on the test blank on which the examinee indicates his preference for one of the two representations The score is the number of correct choices, no time limit being set, although an hour is usually adequate

The correct choices represent the recognized works of old masters Items selected were considered to be of artistic repute and to conform with some recognized art principle in the judgment of competent critics Incorrect choices are deliberate attempts to modify the accepted work in some detail and with a view toward decreasing its artistic merits

Designed For.—The possible usefulness of a reliable and valid measure of art judgment for educational and vocational guidance is apparent The authors claim that persons ranking in the upper quartile "should, other things being equal, find almost certain success in an art career" They suggest that corroborating evidence should be used for those in the lowest quartile and that they "should reconsider before going farther in art" This corroborating evidence should probably not be limited to persons receiving low test scores In fact, suggestions regarding further art training or art work as a vocation should never be based

upon this one source of information Whenever possible, samples of a student's art work should be submitted to competent art critics for judgment as to artistic potentialities

Persons considering occupations not directly in the well-recognized art field, such as advertising, commercial photography, costume illustration, department store buying, interior decoration, etc, should also profit from this test

Norms.—Percentile norms are furnished by the authors for large groups of students of the seventh and eighth grades, ninth and tenth grades, and eleventh and twelfth grades In interpreting an adult's score, the norms for senior high school students may be used Median scores made by different groups are presented below The fact that these different groups are differentiated on the average is indicative of the test's validity.

Number	Group	Median score
360	Eighth-grade pupils	66
233	Tenth-grade pupils	72
169	Twelfth-grade pupils	76
264	Art students	82
35	Art faculty	87

Reliability—Too much reliance should not be placed upon this test, since it does not furnish with all cases so consistent results as are desirable The table on page 212 shows reliability coefficients obtained by different investigators

Validity.—There appears to be a definite relationship between art judgment as revealed by scores and educational attainment The norms show that the average score increases in the upper grades Art students and faculty are differentiated, on the average, from non-art students Non-art faculty persons are inferior when compared with art faculty

Low scores are very rarely made by persons of recognized artistic ability The fact that some young persons with no art training obtain scores as high as gifted art students indicates that the test is measuring a "natural capacity" apart from learning

The test is measuring something other than general academic intelligence All degrees of art judgment are present in persons of low, average and high general intelligence Figures reported

in different investigations show the small amount of overlapping between the traits measured by the test and intelligence tests The correlations reported in six different studies range from − 14 to + 28.

The manner in which the test items were selected is to some extent evidence of their validity In order to be included, they must have been accepted by 25 art experts and by 60 to 90 per cent of 1081 subjects In addition, these works of masters have all stood the test of time

The authors believe that the test is measuring "natural capacity" rather than an acquired ability The range of scores in any group homogeneous with respect to art training is always large, although the average for the group as a whole may differ quite substantially from that of another group One study shows a very slight increase in scores obtained by art majors after a year of art training

Investigators	Subjects	Coefficient method
Meier	69 undergraduates	+ 71 Retest
Meier	100 non-advanced art students	+ 71 Spearman-Brown
Meier	77 Minneapolis Central H S art students	+ 85 Spearman-Brown
Hevner	100 college students	+ 66 Spearman-Brown
Carroll and Eurich	135 college students	+ 78 Spearman-Brown
Carroll and Eurich	49 art majors	+ 61 Retest—1 yr
Carroll and Eurich	103 non-art students	+ 69 Retest—1 yr
Leighton	art students	+ 79 Retest at end of course
Leighton	non-art students	+ 65 Retest
Farnsworth and Misumi	212 Stanford non-art students	+ 59 Odd-even

Correlations between scores and ratings of art talent made by teachers are not high, but this may be a reflection upon the ratings, as well as upon the validity of the test Carroll reports a correlation of + 40 ± .06 between instructors' ratings and Meier-Seashore art scores and a correlation of + 15 between the same instructors' ratings and McAdory art-test scores

Brigham and Findlay report a correlation of + 46 between art grades and test scores of 50 students

Wallis reports a correlation of + 37 between the Meier Seashore and McAdory art tests, indicating that the two tests are not measuring the same "art judgment"

Sex differences, as revealed by this particular measure, are quite striking, women scoring on the average significantly higher than men, according to a study made by Eurich and Carroll

Publisher and Cost.—Bureau of Educational Research and Service, University of Iowa, Iowa City Prices Test booklets for $0 90 each, manual for $0 10, record sheets, $2 per hundred

References.—N C MEIER and C E SEASHORE, *The Meier-Seashore Art Judgment Test Examiner's Manual*, Iowa City Bureau of Educational Research and Service, 1930, H A CARROLL, "What do the Meier-Seashore and the McAdory Art Tests Measure?" *J of Educ Res*, 1933, 26· 661–665, H A CARROLL and A C EURICH, "Abstract Intelligence and Art Appreciation," *J. of Educ Psychol*, 1932, 23 214–220, A C EURICH and H A CARROLL, "Group Differences in Art Judgment," *School and Soc*, 1931, 34 204, P R FARNSWORTH and I MISUMI, "Notes on the Meier-Seashore Art Judgment Test," *J of Appl Psychol*, 1931, 15· 418–420, N C MEIER, "Can Art Talent Be Discovered by Test Devices?" *Annual Report*, Western Arts Association, 1927, Cincinnati, 1928, N C MEIER, "A Measure of Art Talent," *Psychological Monographs*, 1928, 39, MADELINE KINTNER, *The Measurement of Artistic Abilities*, New York The Psychological Corporation, February, 1933

2. **The McAdory Art Test**, 1929, by Margaret (McAdory) Siceloff

Description.—The originator of this scale attempted to devise a method for determining the individual's "good taste" in the field of visual perception This measure is secured by determining the extent to which the individual approaches the opinions of art experts on the relative merits of a series of plates involving various subjects and art elements It is a measure of art judgment and not creative ability

The test material consists of a book containing 72 plates in black and white or in color with four representations for each plate The art subjects used include textiles, clothing, furniture, architecture, painting, etc. In most cases, the four different representations of each plate involve variations in line, dark and light or color, the correct order of ranking having been established by a large group of art experts

About an hour is required for the individual to consider all the plates and his score is the number of correct judgment rankings, made on a sheet prepared for this purpose

Designed For.—Norms are available for age groups from 10 years to the adult level and from the third through the twelfth grade When further art training is being considered, this objective rating of art judgment should furnish supplementary evidence as to the advisability of such training

Norms.—Tentative norms for different groups have been established and the following table, prepared by the test designer, is reproduced here, since it indicates the rather marked differences between averages of dissimilar groups

	Men	Women
The score attainable by mere chance	68	68
The ability of an average 10-year old child in the New York City schools	103	114
The ability of the average first-year high school pupil in the New York City schools	135	156
The ability of the average adult in New York City	145	160
The ability of the average first-year student in an art school	173	179
The ability of college graduates engaged in teaching	162	180
The ability exceeded by only 1 per cent or fewer of the adult population	202	220

The sex difference in this trait is noticeable in the above table, the average for women exceeding that for men in all groups

Reliability.—Different figures have been presented regarding the test's reliability and these figures vary somewhat according to the group tested and the method used The reliability coefficients are not all high A score for a given person might be considerably changed if the test were to be repeated after a time interval of a few months On the other hand, this test appears to be more reliable than some other measures of art judgment and equals in reliability certain other recognized character and aptitude tests In view of the less reliable subjective methods for determining this rather intangible quality, as well as the lack of other reliable and objective measures, one is justified in the judicious use of this device to supplement other data Results obtained in some of the studies of the test's reliability are given in the table on page 215

Validity.—An attempt was made to include only those items approved by "competent critics" in the art field At least 64 per

cent of the group of 100 judges, made up of art producers, teachers, critics, buyers and competent lay critics, was required to approve the ranking of each item before it was accepted Included items also differentiate between persons scoring high and those scoring low on the entire test

The differences in averages between groups is some evidence of the validity of the measure Age differences are apparent, but there is a wide range of scores within a given age Groups which would logically be expected to test high confirm one's

Investigators	Subjects	Correlation
Carroll and Eurich	100 college students	+ 82—corrected by Spearman-Brown formula
McAdory	100 unselected adults	+ 93—split-half
McAdory	100 art students (not advanced)	+ 81—odd-even
McAdory	101 art school students	+ 73—retest after one week
McAdory	95 art school students	+ 63—retest after 2 months
McAdory	47 college students	+ 59—retest after 1 year
McAdory	100 sixth-grade pupils	+ 80
Leighton	60 art students	+ 50—retest after course

expectation Art experts rate highest The fact that some untrained persons score much above others trained in art leads one to suppose that the scale is based upon a native trait rather than one which is acquired through training alone

It cannot be said that the test measures general intelligence to any extent Carroll and Eurich report a correlation of + 10 between the McAdory test and Miller Analogies for 203 subjects They found a correlation of +.24 with another intelligence test for 88 art students Bright and dull children are not so sharply differentiated on the basis of art judgment as they are on intelligence A very dull child is occasionally found to possess outstanding talent in this field

Correlations between these objective results and instructors' ratings of talent of college art majors are low. Carroll reports a

correlation of +.15 for 94 students Since instructors' opinions are unreliable and the group judged is homogeneous, these results may not be so devastating as they appear

Whatever the test measures, it seems to be quite different from that which the Meier-Seashore test measures, since the correlation between these two tests is surprisingly low. Carroll reports a correlation of + 27 between the McAdory and Meier-Seashore tests for 111 subjects and Wallis has found a correlation of + 37 The conclusion one must draw from these data is that "art judgment" is dependent to a great extent upon the content of the art judgment test and that both tests should be given whenever possible

Evidence indicates that, whatever the test measures, it is little affected by art training Groups differing in amount of art training do not differ markedly in test results and there are wide variations in scores within a group homogeneous in respect to amount of art instruction

Publisher and Cost.—Bureau of Publications, Teachers College, Columbia University, New York Prices Test book for $15, record sheets, 25 for $0 40

References—MARGARET McADORY, "The Construction and Validation of an Art Test," New York Bureau of Publications, *Teachers College, Contr to Education,* 383, 1929, MRS MARGARET (McADORY) SICELOFF, *Validity and Standardization of the McAdory Art Test,* New York Bureau of Publications, Teachers College, Columbia University, 1933, H A CARROLL and A C EURICH, "Intelligence and Art Appreciation," *J of Educ Psychol*, 1932, 23 214–220

C. MUSICAL ABILITY TESTS

1. Measures of Musical Talent, 1919, by C E Seashore

Description.—According to Seashore, musical talent is not a single trait but is composed of a hierarchy of traits This particular test measures only a few basic sensory capacities, which are a part of that complex we call musical talent In order to obtain a more complete indication of the individual's ability, it would be necessary to measure musical memory and imagination, musical intellect and feeling and capacity to produce musical tones with skill Although we lack objective means of measuring some of these other factors, it is possible with Seashore's records to obtain a reliable indication of the capacity for pitch and tonal

memory at least These two tests meet the criteria for reliability and validity and we suggest that only these two of the six tests be given, especially when time is limited The other tests in the battery do not measure so reliably or validly what they are supposed to measure that is, the individual's sensitivity for intensity, time, consonance and rhythm

Each test is recorded on a double-disk phonograph record which is played to the subjects, who indicate on prepared blanks their reactions to the paired stimuli For example, in the pitch test, there are a number of paired sounds for each of which the subject indicates whether the second sound is higher or lower in pitch than the one first presented

The intercorrelation between these tests is low so that we are justified in expecting that they are measuring different capacities with little overlapping

The administration of this test is an important factor in securing reliable results and requires a trained examiner. About an hour should be allowed for the full battery

Designed For.—The test may be administered to persons from the first grade upward It is especially significant for those considering music as a career or avocation

Norms.—In his original 1919 Manual, Seashore gives percentile norms for the different tests for large numbers of fifth graders, eighth graders and adults Larson, in 1927, tested additional cases in these three groups and combined the scores with Seashore's to make a new set of norms on a larger sampling Either set of norms may be used, since they are similar, but the 1927 norms are preferable, since they include more cases

Reference to these tables shows that there is a slight correlation between age and scores on these measures and it is for this reason that the interpretations differ slightly for children and adults Seashore explains that these age differences are due to factors other than differences in "innate capacity" Older persons are capable of more sustained attention and interest and such factors as these cause the differences in performance

A very much abbreviated table of norms for the pitch and tonal memory tests from Larson's monograph is presented in the table on page 218 for illustrative purposes, but the complete tables of Seashore or Larson should be consulted for interpretation of an individual's score

NORMS FOR PITCH

Percentile	Per cent right		
	Grade 5	Grade 8	Adult
99	89	91	93
75	77	83	86
50	67	78	81
25	57	67	75
1	43	46	50

NORMS FOR TONAL MEMORY

Percentile	Per cent right		
	Grade 5	Grade 8	Adult
99	90	95	98
75	65	74	84
50	50	63	74
25	39	51	61
1	23	30	36

Reliability.—A number of investigators have been concerned with measuring the reliability of this scale and it would be impractical to list here all the results obtained The references may be consulted for the detailed information

There is considerable disagreement among investigators as to the adequacy of the tests from the point of view of their reliability When low reliabilities are reported, however, one cannot always interpret this to mean that the tests themselves are constructed in such a way as to yield inconsistent results with individuals. One source of unreliability may be in the conditions of administration. The subjects are apt to become bored and inattentive unless special precautions are made to maintain a high degree of attention and effort An experienced and skillful test administrator is an important factor in procuring reliable results

Despite the varying coefficients reported in different studies, there is remarkable agreement in the rank of the six tests when arranged in order of decreasing reliability With very few

exceptions, the tests of tonal memory, pitch, and intensity have the highest coefficients and the tests for time, consonance and rhythm are lower

For information regarding absolute reliability figures, we must depend upon those studies which seem to have controlled the extraneous factors affecting the consistency of the individual's behavior.

Drake has found Spearman-Brown coefficients of + 86 for tonal memory, + 84 for pitch and + 88 for intensity for an unselected group of school children

R C Larson's study of reliability seems to be among the best She has retested large groups of fifth-, sixth-, seventh-, and eighth-grade students and adults at the same and at different sittings, and has presented data which indicate that the tonal memory and pitch tests are sufficiently reliable at all these levels to use for purposes of individual diagnosis The intensity and time tests, especially with adults, do not meet the criterion for use with individuals The tests of consonance and rhythm are entirely inadequate for individual measurement

Validity.—When Seashore first described these scales, he pointed out the fact that they were only slightly related to measures of academic capacity and his statements have since been confirmed by others According to data presented by Larson, the average of the various correlations between intelligence test scores and scores on the six Seashore tests taken individually for fifth, sixth, seventh, and eighth grades was + 23 The range of coefficients between intelligence and the different music tests varied between 00 and + 43

The fact that scores on these scales are unaffected by musical training, as Seashore pointed out, also attests to their validity Corroborating evidence has since been produced at the University of Iowa School of Music On the basis of retests given to a fairly large number of students after they had been studying music for periods of one, two and three years, it was shown that the average gains made on all six tests, after the regular music courses, were so slight as to be insignificant Similar results have been obtained by Stanton at the Eastman School of Music

Despite the fact that scores do not increase with practice, there are significant differences in scores obtained by first-class musicians, semiprofessional musicians and amateur musicians,

when they are compared with beginning music students and nonmusicians, as Stanton has shown Evidently, the test is measuring something which persons possess who have achieved success in the field of music and this "something" is a native capacity which musical training does not improve This makes it possible to compare scores of untrained individuals seeking guidance with scores obtained by musicians

There have been a number of studies of the value of these tests in predicting success in music Here, again, the results are likely to be a function of the method employed, but in these studies also the tonal memory and pitch tests appear to be the most valid Drake concludes on the basis of his study of validity that the tonal memory and pitch tests alone are satisfactory when test scores were compared with teachers' estimates and an examination in music Brennen found the highest validity coefficients for tonal memory and rhythm when scores of 20 students were related to musical performance as rated by four judges Brown found a correlation of + 41 between tonal memory and the average of two rankings of musical capacity which were made by the teacher

Dr. Stanton of the Eastman School of Music has contributed important information regarding the test's validity She has shown that there is a definite tendency for students rated by teachers as possessing great musical talent to be those who obtain high scores on the tests Especially interesting are her findings in regard to length of residence in relation to scores Of 2104 cases tested, 13 per cent of those receiving low ratings on the tests remained in the school for 3 years, while 64 per cent of those receiving high records remained On the basis of such results, the faculty decided to use the tests as a partial basis for admission and sectioning

Publisher and Cost.—C H Stoelting Company, 424 North Homan Ave, Chicago, Illinois, Psychological Corporation, 522 Fifth Ave, New York Price, six double-disk records, manual and key, for $8 40

References.—A W Brown, "The Reliability and Validity of the Seashore Tests of Musical Talent," *J of Appl Psychol*, 1928, 12 418–475, R M Drake, "The Validity and Reliability of Tests of Musical Talent," *J of Appl Psychol*, 1933, 17 447–458, R C Larson, "Studies on Seashore's Measures of Musical Aptitude," *University of Iowa Studies*, Vol 2, No 6, C E Seashore *The Psychology of Musical Talent*, New York Silver, Burdett & Company, 1919, C E Seashore *Manual of Instruc-*

tions and Interpretations for Measures of Musical Talent, New York Columbia Graphophone, 1919, 16 pp , H M STANTON, "Seashore Measures of Musical Talent," *Psychol Monog*, 1928–1929, 39 135–144, H M STANTON, "Measuring Musical Talent," *Personnel J*, 1928, 7 286–292

2. Musical Memory Test, 1933, by R M Drake

Description.—The test was designed to measure musical talent, apart from training It consists of 24 original two-bar melodies of slightly increasing difficulty Following each of these standard melodies there are from two to seven variations which differ from the standard by a change in key, in time or in notes The procedure consists in playing each standard melody on the piano to a single examinee or a group and then playing the variations, requiring the examinees to note on their answer sheets whether the changes were in the key, time or notes

The time required is about 45 minutes and the score is the total number of errors

Designed For.—The test may be used as an aid in determining the desirability of further musical training for vocational or avocational purposes It would be particularly applicable in those cases of young students where no other evidence of musical accomplishment is available A wide range of difficulty is covered, making the test suitable to equally wide ranges of talent

Norms.—Percentile scores for boys and for girls from ages 7 to 23 are included in the Manual of Directions

Reliability.—This test appears to be one of the few measures of musical talent which yield consistent results Drake reports a split-half reliability of + 85 for 100 unselected school children and + 93 for a group of 46 music students

Validity.—According to the author, this is the "only musical test which produces consistently high and significant validity coefficients " He reports a validity of + 67 ± 054 for 46 music school students of 9 to 16 years of age with varied amounts of music training When age and training factors are discounted, this relationship of test scores and teachers' estimates of "innate musical capacity" drops to + 50 ± 075 Further studies of the validity of this test should be undertaken by other investigators

Publisher and Cost.—Distributed by Psychological Corporation, 522 Fifth Ave , New York. Prices Examiner's books for $0 25 each, manual of directions for $0 25, answer sheets for $0 02 each, sample set for $0 75

References —R M Drake, "The Validity and Reliability of Tests of Musical Talent," *J of Appl Psychol*, 1933, 17 447–458, R M. Drake, *Manual of Directions*, Public School Publishing Company, Bloomington, Illinois, 1934

D MECHANICAL ABILITY TESTS

1. Minnesota Mechanical Assembly Test, 1930, by D G Paterson, R M Elliott, L D Anderson, H A Toops and E Heidbreder

Description.—The apparatus consists of three boxes with several compartments each containing parts, which, when correctly assembled, form simple mechanical objects It is a revision of the J L Stenquist Mechanical Assembly Test Time limits have been established for each object, but this allotment is usually ample and the test actually measures the ability to recognize and assemble these devices, rather than speed of performance A certain number of points is given for each perfect assemblage and partial credits are given when parts of an object are correctly assembled When the full time allowed is needed, the complete test requires about an hour It is inadvisable from the standpoint of reliability of measurement to use one or two of the boxes instead of the complete set of three, when the purpose is to determine an individual's performance

Considerable training is required in order to score the items, but detailed directions are given in the examiner's manual

Designed For.—This test was originally designed to measure the mechanical aptitude of boys of junior high school age When applied to other groups, its significance becomes more problematical For persons beyond the junior high school age, mechanical experience and training are factors which vary so markedly among individuals that it is difficult to determine whether an individual's score may be attributed to "aptitude" or to mere exposure to the type of mechanical contrivances contained in the assembly boxes It is only for persons of similar mechanical training opportunities that differences in scores may be said to reveal native differences in "aptitude" For men of considerable mechanical experience the test is too easy Thus, differences in aptitude among them are not adequately determined by the test

Norms.—Percentile norms are furnished by the authors for boys at each year level from the age of 11 through 21 years.

Norms for boys and girls from the seventh grade through high school, men in the engineering college, and men and women in the arts college are also given in the original publication

For university students, scores should be compared with those obtained for a standard occupational sampling of men and women for whom norms have been established This procedure is not very satisfactory and renders only approximate indications of standing in this group

Below are listed a number of occupational groups who have been given the assembly test The percentile equivalents for the mean of each group are given

Number	Groups	Median percentile
61	Ornamental iron workers	69
169	Manual training teachers	68
102	Garage mechanics	68
18	Draftsmen	65
69	Janitors	60
69	Men office clerks	55
29	Minor bank officials	55
31	Machine operators	50
42	Retail salesmen	48
124	Policemen	48
47	Life insurance salesmen	47
494	Occupationally unselected men	44
123	Casual laborers	18

Reliability.—Although the test is a very reliable measure for boys of junior high school age as indicated by a corrected coefficient of + 94, results with adults are not sufficiently consistent to be depended upon in individual cases, the corrected coefficient for 444 occupationally unselected men being + 79 and for 127 women, + 68 Only extremely high or low scores have much significance for adults due to this error Furthermore, the test appears to be too easy for adult men and too difficult for adult women Until further research is available, it probably should be administered to adults in occasional cases only, and then the results should be interpreted with care

Validity.—The test's validity for boys in shop courses has been shown to be adequate It may be considered a good measure

of mechanical aptitude, useful in predicting success in shop courses, such as woodworking, machine shop, sheet metal and auto mechanics, when administered to the mechanically naive young person.

Some indication of the test's validity for adults is shown in the differential occupational patterns obtained and presented in the discussion of norms above. Group averages for mechanical workers are definitely superior to those obtained for occupations not popularly considered to be dependent upon mechanical ability, but this superiority may be a result of differential experience, as well as native ability differences.

The test is very acceptable from the standpoint of its freedom from the measurement of general intelligence. For several different groups of men and women, representing both the unselected population and occupationally selected groups, the correlations between scores on this test and the Pressey educational test range from + .10 to + .26. This means that mechanical ability as measured by this test is only slightly related to academic intelligence. Students who do well in academic school subjects would not necessarily do well in shop courses. It is important to note also that the relationship is not a negative one, that is, boys with low academic capacity are not, therefore, more likely to be mechanically gifted. If this were true, the regrettable practice of transferring failing students to mechanical courses might be justifiable. The possession of low academic capacity does not guarantee the possession of high mechanical intelligence. In fact, it decreases the chances that the individual is gifted mechanically. The relationship, however, is so low as to make it advisable to administer a separate test of mechanical aptitude before making any prediction of what might be.

Publisher and Cost.—Marietta Apparatus Company, Marietta, Ohio. Price, the set of three boxes for $29.

References.—H. J. Green, I. R. Berman, D. G. Paterson, and M. R. Trabue, "A Manual of Selected Occupational Tests for Use in Public Employment Offices," *Bulletins of the Employment Stabilization Research Institute*, 1933, Vol. 2, No. 3, Minneapolis: University of Minnesota Press; D. G. Paterson, R. M. Elliott, L. D. Anderson, H. A. Toops, and E. Heidbreder, *Minnesota Mechanical Ability Tests*, Minneapolis: University of Minnesota Press, 1930; D. G. Paterson, ed., "Research Studies in Individual Diagnosis," *Bulletins of the Employment Stabilization Research Institute*, 1934, Vol. 3, No. 4, Minneapolis: University of Minnesota Press;

B J Dvorak, "Differential Occupational Ability Patterns" *Bulletins of the Employment Stabilization Research Institute*, 1935, Vol 3, No 8, Minneapolis University of Minnesota Press

2. Minnesota Spatial Relations Tests, 1930, by D G Paterson, R M Elliott, L D Anderson, H A Toops and E Heidbreder

Description.—This test is a revision of Link's Spatial Relations test The equipment consists of four boards with 58 odd-shaped cutouts There are two sets of blocks, one for boards *A* and *B* and another for boards *C* and *D* The blocks for each board are placed in a definite order before the examinee and he is instructed to place them in their proper places in the board as rapidly as possible The score is the amount of time required to replace the blocks in the four boards Thus, the test measures directly the speed with which one can discriminate odd sizes and shapes and indirectly "mechanical aptitude"

Designed For.—The test has proved to be a valid indicator of mechanical aptitude for junior high school boys in shop courses Since it is of such a nature that mechanical training and experience do not affect the score, it may be adapted to older age groups for whom it also yields fairly valid results It will probably be of greatest usefulness when applied to young students considering occupations generally regarded as requiring mechanical aptitude, such as auto mechanics, woodwork, sheet metal work, general mechanics, and handicrafts

Norms—The authors provide age norms for boys at each year level from year 11 to 21 and grade norms for boys and girls from grade seven through grade twelve Norms are also given for men engineering students and men and women arts college students

Scores may also be compared with adult norms established by the Employment Stabilization Research Institute on a group of men and women representing the normal age and occupational distribution for three cities in Minnesota

Darley has reported evidence which indicates that by using board *A* as a practice trial and by considering as the score the total time to place the blocks in boards *B*, *C* and *D*, the test's reliability is increased For this reason, revised norms based upon such scores for occupationally unselected populations of men and women are presented here

Letter rating	Mid-sigma score	Percentile range	Spatial Relations Test: boards *B*, *C*, *D* (Score in seconds)	
			Men	Women
A	7 0+	93 4–100 0	0–621	0–619
B	6 0	69 2– 93 3	622–814	620–838
C	5 0	30 9– 69 1	815–1047	839–1037
D	4 0	6 7– 30 8	1048–1557	1038–1579
E	3 0–	0 0– 6 6	1558 and over	1580 and over

Below are listed a few groups for whom mean scores on boards *A*, *B*, *C* and *D* are available These differences between averages add to the evidence of validity It must be remembered that there is considerable spread of scores within each occupation, however

Number	Group	Median percentile
102	Garage mechanics	85
170	Manual training teachers	75
62	Ornamental iron workers	69
113	Men office clerks	66
20	Draftsmen	59
29	Minor bank officials	59
84	Retail salesmen	55
47	Life insurance salesmen	55
489	Occupationally unselected men	50
26	Minor executives	46
69	Janitors	30
124	Policemen	27
33	Casual laborers	2

Reliability.—Reliability coefficients calculated for men and women and for boys and girls indicate that the test, when given in its entirety, is sufficiently reliable for use with individuals The corrected coefficient for 100 junior high school boys was + 84 and for 482 adult men, unselected for occupation, it was + 91 For adult women occupationally unselected the correlation was + 89.

Validity.—For young boys the test is measuring something related to success in mechanical shop courses. Sufficient research at the higher age levels has not been done to warrant any very definite statement as to particular occupations for which the test is useful. The material presented above under the discussion of norms, however, is evidence that, on the average, men in different occupations make substantially different scores. One-half of the garage mechanics tested make scores which are better than 85 per cent of men in general. Manual training teachers and ornamental iron workers are also very high on the average. Unpublished research results secured by the Adjustment Service in New York City and by the Rehabilitation Division of the National Tuberculosis Association show that kindergarten and nursery school teachers and occupational therapists make unusually high scores in the tests. This information should be of value to the woman student who "does not know what to prepare for" and who makes a high score in this test.

Although academic intelligence is not an important element in the time scores for the test, it is being measured to some extent as evidenced by correlations of +.43 between the test and Pressey scores for 334 occupationally unselected men and +.36 for 131 women. The relationship appears to be about the same for homogeneous groups of mechanical workers and slightly lower for groups of clerks and junior high school boys.

Publisher and Cost.—Marietta Apparatus Company, Marietta, Ohio. Price, set of equipment for $34.

References.—(Same as for Mechanical Assembly.)

3. Revised Minnesota Paper Form Board Test, 1934, by R. Likert and W. H. Quasha

Description.—As indicated in its title, this test is a revision of the earlier paper form board devised by the Minnesota investigators in their study of mechanical abilities. The earlier test was difficult to score and the scoring involved an undesirable element of subjectivity. This revision has overcome some of these limitations. It is included here because it appears to have important guidance values which may be developed with further use and experimentation. The revision simplifies the scoring by changing the items to the multiple-choice type. In each of the two comparable forms, the examinee is presented with 64 items,

each consisting of a diagram of from 2 to 5 disarranged parts of a geometrical figure In each item, there are 5 diagrams indicating how these parts might appear if fitted together Only one of the 5 choices is correct Four examples are given and the examinee is allowed to practice on the four samples before beginning the examination proper for which 20 minutes are allowed The test presumably measures the same type of ability as is required in the test of spatial relations It measures ability to visualize spatial patterns in two dimensions The paper-and-pencil task involves more of the linguistic type of intelligence, however, than does the form board This is disadvantageous when individuals with less than average intelligence are examined

Designed For.—The original test was used for junior high school pupils, but with the norms which the present authors have furnished, the scores of examinees from 9 years and above may be compared The authors have not as yet shown conclusively, however, that the scores for these older age groups have the same meaning as those for the younger groups on whom the test was originally standardized

Norms—The authors furnish percentile norms for a considerable number of groups, a few of which are condensed here

Number	Groups	Scores				
		100th percentile	Q_3	Median	Q_1	5th percentile
344	Freshman engineering students	64	48	43	38	30
238	Senior engineering students	64	51	46	41	32
247	Liberal arts college freshmen	62	44	38	33	24
1288	High school seniors (male)	62	45	39	33	22
173	Printers' apprentices	56	44	39	33	24
100	Adults (men and women)	52	37	31	23	9

In addition to the above groups, norms are furnished for engineering students of different amounts of training, first-year vocational school students, elementary school boys and girls of different grades and ages, and men and women adults classified into two age categories

Reliability.—The considerably lengthened revision yields more consistent results than did the short original form The split-half reliability of the revision is about + 92 for one form as determined by averaging a number of corrected coefficients calculated upon different rather homogeneous groups The range of the corrected coefficients for these groups is from + 83 to + 98 with the bulk of them exceeding + 90

Validity.—A number of findings point to the probability that the test at least approaches its predecessor in validity In the first place, it appears to be measuring about the same traits, as indicated by a corrected correlation of + 89 with the earlier device The original form correlated to the extent of + 65 (uncorrected) with a quality-information criterion of mechanical ability which was developed by the Minnesota investigators

The norms for different groups reveal differences in the expected direction For example, engineering students score about 6 points higher on the average than do arts college students Printers' apprentices make scores about 5 points higher than those for the general population of men from 16 to 25 years of age. There is considerable overlapping of scores between populations, however

The authors report a correlation of + 49 obtained between scores made on the revised form and mechanical drawing grades for 174 students The authors report a correlation of + 40 between the test and the Otis Self-Administering Examination for 77 students

Publisher and Cost—The Psychological Corporation, 522 Fifth Ave, New York Prices tests for $0 04 each, $3 50 per hundred

References—R LIKERT, "A Multiple Choice Revision of the Minnesota Paper Form Board Test," *Psychol Bull*, 1934, 31 674, R LIKERT and W H QUASHA, *Revised Minnesota Paper Form Board Test Manual of Directions*, The Psychological Corporation; D G PATERSON, R M ELLIOTT, L D ANDERSON, H A TOOPS and E HEIDBREDER, *Minnesota Mechanical Ability Tests*, Minneapolis University of Minnesota Press, 1930, W H QUASHA, "The Revised Minnesota Paper Form Board Test—An Experiment in Test Construction," M A *Thesis*, New York University, May, 1935

4. Kent-Shakow Form Boards, 1928, by Grace Kent and D Shakow

Description.—The industrial model of the Kent-Shakow revision of the Worcester Form Board Series is a wooden frame

22 inches long by 10 inches wide with 5 recesses of slightly different shapes There are 7 different sets of blocks with which the recesses may be filled, and each of the sets constitutes a different task for the examinee Each task is presented 5 times because of the 5 recesses of slightly altered shape For example, the first task (2*S*) involves fitting each of the 5 recesses with 2 blocks which are cut on the straight line and divided in the same way For the second task (2*D*), the examinee fits each of the 5 recesses with a different set of blocks which are cut on the diagonal The number of blocks in each recess is still 2 for this task In the third task (3*S*) 3 straight-cut blocks are placed in each recess In the fourth task, (3*D*) 3 diagonally cut blocks are required to fill each recess Likewise, for the fifth task (4*S*), each recess requires 4 straight-cut blocks, for the sixth (4*D*), 4 diagonally cut blocks, for the seventh (4*DD*), 4 other diagonally cut blocks, and for the eighth (5*D*), 5 diagonally cut blocks

For each task the set of blocks is arranged in a random order and the score is the time in seconds required to fill the 5 recesses The individual is not required to proceed beyond the task in which a failure to place the blocks occurs, unless the task is one involving diagonal forms In that case, the next higher test, involving straight-cut blocks is attempted According to the procedure used in the Cincinnati Employment Center, where research with these boards is in progress, all examinees who take the test are given the first three simpler tasks and the first of the more complex tasks The time required to complete these determines whether the next more complex task shall be administered The time required for task six determines whether task seven shall be administered, and so on through the eighth task of the set

Final ratings on the entire test are two· (1) the mean percentile on tasks 2*D*, 3*S*, and 4*S* giving a rating on the simple problems; the mean percentile on one, two, three or four of the more complex tasks (3*D*, 4*D*, 4*DD*, 5*D*) giving the rating on complicated problems

Designed For.—Although originally designed to measure mental capacity and mechanical aptitudes of mental hospital patients, these form boards now appear to have some promise as measures of a type of manual or mechanical aptitude which is

found in varying degrees in different occupational groups At the present stage of research on this test, the concern is not so much with naming the trait which is being measured as with studying occupational differences It is because of the promise of this test, as determined from research which is now being conducted at the Cincinnati Employment Center by Dr Lorene Teegarden, rather than because of extensive published results, that they are described here They plan to publish more findings regarding the test, its interpretation and age, sex, educational and occupational differences The counselor alert for new techniques for determining in a reliable fashion differences between persons that may have important occupational implications, will find it worth while to keep in touch with the literature on this test and others which are being tried out in practical employment situations In the meantime, it may be used provisionally for students leaving school to enter occupations involving a rather high degree of skill in manipulation, such as helpers to skilled workers, apprentices, wrappers and packers, factory machine operators, bench assemblers, laundry workers, etc

Norms.—The only norms which are available are those established at the Cincinnati Employment Center. The norms, which they have established on a group of unemployed young adults, ranging from 16 to 25 years of age and applying for jobs involving the manipulation of materials, are abbreviated below for interpretive purposes The schooling represented in this population varies from college to no schooling at all, and the group includes some college students applying for manual

Abbreviated General Norms (in Seconds) for Kent-Shakow
(Based on 400 Males and 300 Females)

Percentile	Simple tasks						Complex tasks							
	2D		*3S*		*4S*		*3D*		*4D*		*4DD*		*5D*	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
95	18	19	38	41	56	60	72	80	176	185	130	162	300	288
75	27	28	56	55	77	79	119	128	314	342	210	241	630	628
50	33	34	72	71	100	101	168	209	535	642	423	905		
25	43	47	93	96	124	125	269	328						
5	73	86	172	191	206	235	508	660						

occupations for part-time or vacation jobs Otherwise, the occupational experiences of those in the norm group include, for the main part, factory work, restaurant work, outdoor labor, domestic service, sales work, delivering of newspapers and similar work

In addition to the general norms given in the table on page 231, occupational norms have been established at Cincinnati by testing unemployed workers classified by previous occupation These norms are included here in abbreviated form

OCCUPATIONAL NORMS FOR KENT-SHAKOW FORM BOARDS

Occupations	Number tested	Mean percentile ratings	
		Simple tasks	Complex tasks
Male			
Helpers in skilled trades	82	63	68
Errand and delivery boys	42	63	60
Sales clerks in stores	118	57	59
Truck drivers and chauffeurs	75	55	62
General factory labor, hand processes	52	55	57
Packers and wrappers	44	55	56
Waiters, bus boys, kitchen helpers, dishwashers	62	42	45
Truck helpers and loaders	40	38	38
Female			
Power machine operators	72	57	61
Packers (candy, glass, dishes, food, cakes)	20	55	60
Sales clerks in stores	73	54	58
Operators of factory machines	59	52	60
Factory assemblers	50	47	60
General factory, labor, hand processes	111	43	53
Packers, labelers, sorters	86	50	41
Domestic workers	207	43	45
Waitresses, restaurant	120	33	53
Laundry workers	54	37	37

Reliability.—There has been no attempt to determine statistically or experimentally the reliability of this test

Validity.—Evidence with respect to validity consists in differences disclosed when the test has been given to occupationally

distinct groups Differences, such as are presented in the Occupational Norms Table above, have been found It is possible that these differences might have been even more significant had the groups tested been more homogeneous with respect to occupational experience and efficiency The table of occupational norms includes unemployed persons who have had a paid job in the occupation for one month or more It is obvious that so poor a criterion includes many individuals who are unemployed because of inefficiency in their previous work

A study of the table of occupational norms will show that, in spite of the poor criterion, there is a considerable range, on the average, in the performance of different occupational groups

Publisher and Cost —C H Stoelting Company, 424 North Homan Ave Chicago, Illinois Price, $60 for industrial model Recent information indicates sharp advance in price These boards are also made on order by Mr Sven G Nilsson, 16 Maverick Rd, Worcester, Mass, for $45

References —G H KENT and D SHAKOW, "A Graded Series of Form Boards," *Personnel J*, 1928, 115–120, D SHAKOW and G H KENT, "The Worcester Form Board Series," *Ped Sem*, 32 599–611.

5. MacQuarrie Test for Mechanical Ability by T W MacQuarrie

Description.—This is a paper-and-pencil test designed to measure aptitude for mechanical and manual types of work There are seven parts, each preceded by a practice exercise These are tests of tracing, tapping, dotting, copying, location, blocks and pursuit They seem to measure eye-hand coordination, speed of movement and ability to deal with spatial relationships The entire battery requires about half an hour

Designed For.—The test may be found appropriate for junior and senior high school students for whom shop courses are being considered This test should serve as a check on estimates of mechanical ability or other mechanical tests before students enter upon vocational training requiring this type of aptitude

Norms.—An abbreviated form of the age norms supplied in the pamphlet of instructions follows

Year	10	12	14	16	18	20
Mean raw score	26	44	53	60	65	68

Bingham's mean scores on the subtests secured by 124 toolmaker apprentices are as follows

Subtests	1	2	3	4	5	6	7
Mean raw score	39	37	18	37	21	13	20

Reliability.—The author reports reliability coefficients on the subtests which range from + 72 to + 86, but the group used was not described The whole test yielded a retest reliability of over + 90 when given to three groups numbering 35, 80, and 250 students

Bingham reports a standard error of measurement of a person's total score of 5 points only For the subtests the individual's "true" score is not quite so well estimated by the score which he actually obtains. The score on the total test may be considered to be a reliable measure

Validity.—When test scores are compared with teachers' ratings of mechanical ability, there is a fair degree of relationship, as represented by a correlation of + 48 When actual performance on mechanical projects is compared with test scores, the relationship varies from + 32 to + 81, but the author does not describe in detail the criterion or the group.

Studies have been made to determine the extent to which the test is measuring verbal intelligence The author points to two studies in which the correlations with group mental tests were + 20 and + 002 with a group of 60

Pond has found the following relationships between this test and other measures.

Years of schooling	+ 29
O'Connor Wiggly Block	+ 34
Otis (Higher) Intelligence	+ 38
Kent-Shakow	+ 43

Bingham states that the test "provides only a rough indication of the degree to which a person has some of the aptitudes desired in mechanical or manual occupations" Other evidence should supplement the test scores whenever possible Extensive use of the test in the practical counseling situation should await further research

Publisher and Cost.—Research Service Company, 4529 South Van Buren Place, Los Angeles, California; The Psychological Corporation, 522 Fifth Ave, New York Prices tests, including directions, keys and norms, 25 copies for $1 50; sample set for $0 15

References—T W MacQuarrie, "A Mechanical Ability Test," *J of Personnel Res*, 1927, 5 329–337, W V Bingham, "MacQuarrie Test for Mechanical Ability," *Occupations, the Vocational Guidance Magazine*, 1935, 14. 202–205

E. DEXTERITY TESTS

1. Finger Dexterity Test, 1928, by Johnson O'Connor.

Description.—This apparatus consists of a metal plate in which 100 holes, each large enough to hold three small metal pins, are drilled The individual picks up three pins at a time from the shallow tray attached to the plate, and places them in the holes as fast as he can The score is a measure of the speed with which an individual can use his fingers in work requiring fine eye-hand coordination

The time required for the test varies, but 15 minutes are usually ample

Designed For.—Finger dexterity as measured by this test seems to be necessary in occupations requiring rapid hand work with small objects It may be administered to girls seeking employment in machine, clock and instrument assembling, packing and office machine operating Stenographers, typists and office clerks score much higher, on the average, than the norm for adult women If this skill is not acquired on the job, the counselor should give some negative weight to a low score for a girl planning to enter clerical occupations It probably has some meaning also for men planning to enter clerical occupations and drafting Extremely poor performance on this test may be an indication that the individual will be too slow and awkward for many occupations in which nimble fingers are an asset

Norms.—For adults, norms may be used which have been established by the Employment Stabilization Research Institute on a standard sample of men and women in Minnesota representing the normal age and occupational distribution O'Connor also furnishes norms for men and women in *Born That Way* The norms for women differ from those for men because of superior performance by women in this simple skill. Some work has been done at different plants in establishing norms for selected types of work In the table on page 236 are listed mean scores for a number of different occupations. The indicated per cent of the general population who are excelled by the average person in the occupational group allows one to judge the approximate superiority of the group in question It should be remembered,

however, that there are wide variations within some of these occupational groups.

MEN

Number	Groups	Mean scores	Median percentile
17	Bank tellers	243.0	80
113	Office clerks	255.0	70
27	Accountants—bookkeepers	255.0	70
63	Retail salesmen	255.4	70
21	Draftsmen	258.6	69
170	Manual training teachers	257.8	67
47	Life insurance salesmen	261.1	66
23	Shipping—stock clerks	263.4	64
26	Miscellaneous minor executives	267.7	60
29	Minor bank executives	268.6	60
61	Ornamental iron workers	271.3	57
102	Garage mechanics	278.4	51
124	Policemen	288.0	43
69	Janitors	292.3	39
31	Machine operators	331.3	18
228	Casual laborers	385.1	7

WOMEN

Number	Groups	Mean scores	Median percentile
180	Office clerks	225.5	71
180	Stenographers—typists	230.4	65
21	Office machine operators	231.0	64
65	Retail saleswomen	231.6	64
15	Food packers	235.3	59
19	Butter packers	247.9	47
317	Graduate nurses	252.0	42
31	Butter wrappers (1 lb.)	261.0	33

Reliability.—Sufficiently consistent results for use with individuals may be expected with this instrument. According to one study, the Spearman-Brown corrected reliability coefficient was +.93 for 475 men and +.90 for 215 women representing a normal occupational sampling from Minnesota.

Validity.—Investigation of the occupational significance of this test should be extended. The material included under the discussion of norms is merely suggestive.

For one study, 36 women applicants were interviewed, rated, tested and hired for factory assembly work Of those whose scores were in the lowest quartile, 36 per cent terminated their employment before 8 months of service while only 6 per cent of those in the highest quartile left during the same time interval Over 50 per cent of those who had been rated "A" by interviewers left the concern in this time Other studies also have shown that the establishment of critical scores on this test for hiring purposes substantially decreases the number of failures and terminations

Correlations between the Finger and Tweezer Dexterity tests reveal the fact that there is some element in common, although the relationship is not marked, as indicated by correlations of about + 56 for a large and heterogeneous group of men and + 33 for women

Publisher and Cost.—J O'Connor, Stevens Institute of Technology, Hoboken, New Jersey Price, board for finger and tweezer tests with pins, for $20 The Department of Mechanical Engineering at the University of Minnesota, Minneapolis, will also supply the test on order

References —D M ANDREW and D G PATERSON, "Measured Characteristics of Clerical Workers," *Bulletins of the Employment Stabilization Research Institute*, 1934, Vol 3, No 1, Minneapolis. University of Minnesota Press, B J DVORAK, "Differential Occupational Ability Patterns," *Bulletins of the Employment Stabilization Research Institute*, 1935, Vol 3, No 8, Minneapolis University of Minnesota Press, H J GREEN, I R BERMAN, D G PATERSON, and M R TRABUE, "A Manual of Selected Occupational Tests for Use in Public Employment Offices," *Bulletins of the Employment Stabilization Research Institute*, 1933, Vol 2, No 3, Minneapolis University of Minnesota Press, MILDRED HINES and JOHNSON O'CONNOR, "A Measure of Finger Dexterity," *J of Personnel Res*, 1926, 4 379–382, JOHNSON O'CONNOR, *Psychometrics*, Cambridge, Massachusetts Harvard University Press, 1934, JOHNSON O'CONNOR, *Born That Way*, Baltimore Williams & Wilkins Company, 1928, D G PATERSON, ed, "Research Studies in Individual Diagnosis," *Bulletins of the Employment Stabilization Research Institute*, 1934, Vol 3, No 4, Minneapolis University of Minnesota Press

2 **Tweezer Dexterity Test,** 1928, by Johnson O'Connor

Description.—The apparatus for this test is the same as that for the finger dexterity test, except that the reverse of the metal board, in which are drilled 100 holes, each large enough to hold one small metal pin, is used The tray holds the pins, which are picked up one at a time with a pair of tweezers and placed in the holes as fast as possible. The score is a measure of the skill

and speed with which the person is able to manipulate a small tool in work requiring fine eye-hand coordination. Rarely is more than 10 minutes needed for administration

Designed For.—Several occupations have been studied by O'Connor He suggests that the test be given to persons planning to enter work requiring unusual steadiness of motor control and rapid eye-hand coordination in the use of fine tools. High scores in tool dexterity are necessary in the following occupations, according to O'Connor Laboratory work in physiology, biology, botany and geology; surgery; dentistry; designing in engineering, drafting, and architecture, art work, dressmaking, watch and clock repairing and assembling, miniature instrument and spring assembling, jewel work; and machine and hand glass work

According to O'Connor, a person with awkward fingers but with all other qualifications for an occupation calling for laboratory work should persevere with the laboratory work that is required, but plan to capitalize upon his other assets by entering some aspect of the field which does not involve the use of delicate laboratory apparatus

For suggestions of other occupations for which the test may have some value, see the occupational norms presented below Apparently some types of work requiring work with paper and pencil involve this type of manual skill Occupations requiring larger body movements, such as heavy labor, janitor work, machine operating, shipping, and auto mechanics do not demand speed in making fine coordinations and in working with fine tools and articles.

Norms.—Norms for adults are furnished with the author's original presentation of the test More recent ones based on a standard occupational sample of men and women in Minnesota are available in the manual of occupational tests which is cited in the reference Scores for students in high school and college may be referred to these norms for interpretation

The average scores made by a number of different occupational groups are listed in the table on page 239 showing the percentage of persons in the general population who are exceeded by the average person of the occupation

Reliability.—Although no exact figures are available, there are substantial indications that this device yields results which are

equally as consistent as those secured when the reverse of the board is used for measuring dexterity with the fingers

Men

Number	Groups	Mean scores	Median percentile
109	Office clerks	323 1	76
17	Bank tellers	324 6	76
27	Accountants—bookkeepers	324 6	75
170	Manual training teachers	326 6	74
21	Draftsmen	334 8	70
29	Minor bank officials	336 9	68
62	Ornamental iron workers	341 3	65
46	Life insurance salesmen	345 2	62
43	Retail salesmen	346 3	58
102	Garage mechanics	352 2	56
23	Shipping—stock clerks	354 6	54
25	Miscl minor executives	360 4	50
31	Machine operators	384 6	34
69	Janitors	388 0	34
124	Policemen	390 0	33
226	Casual laborers	570 5	1

Women

Number	Groups	Mean scores	Median percentile
178	Office clerks	322 9	65
180	Stenographers—typists	333 0	57
317	Graduate nurses	334 0	55
19	Butter packers	340 5	50
15	Food packers	344 7	48
31	Butter wrappers (1 lb)	353 2	42

Validity.—The author claims that the test is sampling activities analogous to those employed by laboratory workers and persons who use fine instruments, such as physiologists, designing engineers, dentists, small-parts repairmen, jewelry and watch repairmen, etc

Publisher and Cost —Johnson O'Connor, Stevens Institute of Technology, Hoboken, New Jersey Price, board for finger and tweezer tests, with pins for $20 The Department of Mechanical Engineering at the University of Minnesota, Minneapolis, will also supply the test on order

References—D M. ANDREW and D G PATERSON, "Measured Characteristics of Clerical Workers," *Bulletins of the Employment Stabilization Research Institute*, 1934, Vol. 3, No 1, Minneapolis University of Minnesota Press; B J DVORAK, "Differential Occupational Ability Patterns," *Bulletins of the Employment Stabilization Research Institute*, 1935, Vol 3, No 8, Minneapolis· University of Minnesota Press, H J GREEN, I R BERMAN, D G PATERSON, and M R TRABUE, "A Manual of Selected Occupational Tests for Use in Public Employment Offices," *Bulletins of the Employment Stabilization Research Institute*, 1933, Vol 2, No 3, Minneapolis University of Minnesota Press, JOHNSON O'CONNOR, *Born That Way*, Baltimore. Williams & Wilkins Company, 1928

3. Minnesota Manual Dexterity Test, 1931, by W A Ziegler

Description.—The apparatus for this test consists of a board measuring 39½ inches by 10¼ inches (see references for exact dimensions) There are 4 rows of 58 round holes in the board The blocks, which fit easily into these holes, are placed in a regular order beyond the board and the examinee is instructed to replace the blocks in the board in a specified manner and as quickly as possible Four trials are allowed and the time for each recorded

A second task, called the Turning Test, was devised, but directions and norms are not included in the manual For this group of four trials the blocks are presented in their positions in the board. The examinee is instructed to start at one end of the board and to turn each block over by lifting with one hand and replacing with the other until all 58 blocks have been turned The two parts measure speed of arm and hand movements in picking up and placing blocks in uniform holes The entire test usually requires less than 10 minutes

Designed For.—Although the test was originally used in connection with a minor study on the spatial relations test, subsequent work with factory wrappers and packers to whom the test was administered indicated its value as a possible technique for selecting workers for factory jobs calling for rapid hand coordination It may be of some usefulness to the counselor who is dealing with high school students leaving school to enter semiskilled and unskilled jobs requiring the type of dexterity being measured by this device

Norms.—Adult norms for the Placing Test for men and women separately are furnished in the Employment Institute Manual Revised norms published in a later manual are reproduced here

The score in this revision consists of the sum of the number of seconds taken in the second, third, and fourth trials By using Trial 1 as a practice trial, the reliability of the results has been shown to be increased

Letter rating	Mid-sigma score	Percentile range	Placing test (Score in seconds)	
			Men	Women
A	7 0+	93 4–100 0	0–148	0–145
B	6 0	69 2– 93 3	149–167	146–161
C	5 0	30 9– 69 1	168–184	162–174
D	4 0	6 7– 30 8	185–219	175–197
E	3 0	0 0– 6 6	220 and over	198 and over

Mean scores made in the Placing Test by men and women in different occupations are given below

Number	Groups	Mean score, in seconds	Median percentile
	Women		
18	Butter packers	197 8	94
31	Butter wrappers (pound)	203 7	92
15	Food packers	207 0	88
23	Butter wrappers (¼ pound)	208 9	86
16	Butter "cartoners" (pound)	210 0	85
164	Office clerks	223 3	60
	Men		
66	Office clerks	224 0	77
24	Minor bank officials	228 3	70
14	Other minor executives	229 3	68
102	Garage mechanics	236 6	55
382	Standard sample	240 4	50

Reliability—Darley has shown that the test as a whole, and the Placing and Turning tests separately, are reliable for both men and women The consistency of an individual's score is more stable, however, when the first trial is used as a fore-exercise practice trial The coefficients, when corrected by the Spearman-Brown formula, are, for the most part, + 90 or above for groups

representing a normal occupational sampling of urban population

Validity.—The test's main claim for validity is that rather large differences in average scores have been found among different occupational groups Persons in occupations calling for a high rate of speed in hand and arm movements have been found, on the average, to make strikingly higher scores than those in jobs not requiring such rapid coordination According to Dvorak's study of the Placing Test, "100 per cent of the food packers, 100 per cent of the butter packers, 86 1 per cent of the wrappers of quarter pounds of butter, 92 9 per cent of the wrappers of one pound of butter, and 81 2 per cent of the butter cartoners reach or exceed the median of the standard sample of women" Furthermore, these workers are not differentiated from the general population by the O'Connor Finger and Tweezer Dexterity Tests Further research is needed to determine whether the differences which are found are due to training on the job or to natural differences It is conceivable that the slower moving persons have been eliminated from these semiskilled jobs, such as packing and wrapping

Publisher and Cost.—Mechanical Engineering Department, University of Minnesota, Minneapolis, Minnesota Price, $6 50 per set of original apparatus Educational Test Bureau, 720 Washington Ave S E, Minneapolis, Minnesota Price, $6 50 per set of apparatus This apparatus is a slight revision of the original The norms reported in the Institute bulletins were given for the original board

References—J G Darley, "The Reliability of the Tests in the Standard Battery," in "Research Studies in Individual Diagnosis," (D G Paterson, ed) *Bulletins of the Employment Stabilization Research Institute,* 1934, Vol 3, No 4, Minneapolis University of Minnesota Press, B J. Dvorak, "Differential Occupational Ability Patterns," *Bulletins of the Employment Stabilization Research Institute,* 1935, Vol 3, No 8, Minneapolis University of Minnesota Press, H J Green, I R Berman, D G Paterson, and M R Trabue, "A Manual of Selected Occupational Tests for Use in Public Employment Offices," *Bulletins of the Employment Stabilization Research Institute,* 1933, Vol 2, No 3, Minneapolis University of Minnesota Press

F. MISCELLANEOUS APTITUDE TESTS

1. Medical Aptitude Test, 1930, by F A. Moss

Description.—A new form of this test has been administered yearly to applicants in over 90 per cent of the medical schools in this country The subtests are designed to measure the following abilities

1 Comprehension and retention
2 Visual memory
3 Memory for content
4 Logical reasoning
5 Scientific vocabulary
6 Understanding of printed material

The time required for the test is less than an hour and a half Considerable effort was put into the construction of the test in order to include only valid items Preliminary forms were tried on persons of known ability and the items carefully constructed and submitted to a number of test and subject-matter experts before inclusion in the final form

Designed For.—The use of this test has been restricted to medical colleges up to date for the testing of entering students, but it is possible that old forms may be made available to counselors desiring to advise students regarding plans for entering the medical profession

Norms.—Percentile norms are issued by the committee concerned with the administration of this test

Reliability.—No information is available

Validity.—For a complete discussion of validity, the reader is referred to the articles cited below In the secretary's report for 1935 a study was made of the relationship between test scores and subsequent success during interneship, as rated by superiors Of those making a test score in the upper tenth of the 1000 graduating students studied, 43 per cent were rated as among the best internes which the hospital had had, while only 5 per cent were rated below average or poor

Other studies indicate that the test predicts success during the medical training period also Of the students tested in one year, 43 per cent of those scoring in the lowest tenth on the test had failed by their junior year, whereas only 2 per cent of those scoring in the upper tenth had failed Moreover, the average grade of those low-scoring students who managed to pass was considerably lower than the average grade of those scoring high on the test

The authors are clearly aware of the limitations of the test, and urge that it be used with other criteria such as premedical grades and personality ratings Although this test has been shown to be the best single criterion of success in the medical school (a

better criterion than premedical grades alone), prediction is improved when based upon more complete information regarding the individual

If the test scores alone were to be used as a basis for selecting students, refusing to admit those in the lowest 10 per cent of the class would eliminate 25 per cent of the failures, 15 per cent of the mediocre students, 7 per cent of the fair students, and 3 per cent of the good students, according to one evaluator of this test

Publisher and Cost —Committee on Aptitude Tests for Medical Students, Association of American Medical Colleges This test has been available only to members of the Association of American Medical Colleges for use in cooperative testing programs

References —A M Chesney, "Evaluation of the Medical Aptitude Test," *J of the Assoc of Amer Medical Colleges*, 1936, 2 15–32, F A Moss, "The Secretary's Report," *J of the Assoc of Amer Medical Colleges*, September, 1931, May, 1932, January, 1933, March, 1934, June, 1935

2. Aptitude Test for Nursing, 1931, by F A Moss and T Hunt

Description.—Less than an hour of time is required to administer this measure of aptitude for nursing There are seven parts, dealing with scientific vocabulary, general information, understanding of printed material, visual memory, memory for content, comprehension and retention, and ability to understand and follow directions The content of the various parts is concerned with material pertaining to the work of a nurse, but at the same time it does not assume previous training in that occupation Some of the questions resemble those found in a general intelligence test and for this reason we should expect to find that at least part of what it is measuring is general capacity for work requiring abstract intelligence rather than a special capacity for nursing

Designed For.—The test has been administered to students immediately before entrance to schools of nursing It probably is not so suitable for young high school students considering nursing as a vocation because of the fact that they may not have had sufficient opportunity to gain the type of information called for.

Norms.—The test publishers supply percentile norms but, due to the wide variations in ability among different student groups, it is advisable for institutions to establish local norms for interpretive purposes

Reliability.—No information on reliability has been published

Validity.—According to an unpublished study made of private schools of nursing in Minnesota and cited in the references, the indications are that scores on the test are definitely related to achievement during the first year of work in the nursing school, as measured by teachers' grades and a comprehensive achievement test The relationship is obscured in the correlation figures, however, as the authors point out, because of the unreliability and the low validity of these particular teachers' grades as criteria When a measure of general intelligence and reliable achievement tests in English and general science are added to this test of nursing aptitude, prediction of achievement in first-year nursing courses would be considerably more substantial and higher than could be obtained from high school grades alone or from a measure of college aptitude Hail Douglas, in an unpublished study at the University of Minnesota, found a correlation of + 64 between the Moss Test and first quarter grades in the School of Nursing This coefficient becomes + 72 when high school grades are combined with the Moss Test

Publisher and Cost —Center for Psychological Service, Washington, D C The Psychological Corporation, 522 Fifth Ave , New York Price, $12 per hundred

References —E G WILLIAMSON, R D STOVER, and C B. FISS, "The Selection of Student Nurses," To appear in the *Journal of Applied Psychology*

3. Law Aptitude Examination, 1927, by George D. Stoddard and M L Ferson

Description.—After analyzing the abilities which seemed to be required in law, the devisers of this aptitude examination included in the four parts of the test, which requires about 65 minutes of time, items which presumably measure the following abilities·

1 Capacity for accurate recall
2 Comprehension and reasoning by analogy
3 Comprehension and reasoning by analysis
4 Skill in symbolic logic
5 Comprehension of difficult reading

In Part I the examinee is allowed 4 minutes to read a case At the end of the examination he is tested for recall by a number of multiple-choice questions regarding this material.

In Part II a second case is given and, after reading it, the examinee is asked to answer true-false questions regarding it, to indicate the analogous points in a second hypothetical case, and to state whether certain facts in the original case were relevant or not in the hypothetical case.

Part III contains the only items which do not have a legalistic content. The examinee indicates whether the conclusions to given statements are true or false. The examinee's ability in symbolic logic is being measured.

In Part IV the examinee is asked to indicate, by reference to the material presented for reading, the marked selections which contain the answers to the questions. Comprehension in reading matter in the field of law is being measured.

The reading material in this test is largely drawn from legal documents, but training in law is not a prerequisite to taking the test. The content has more appeal to the prelaw student and appears to be getting at something in addition to general academic intelligence.

Designed For.—During the course of standardizing this examination it has been given to entering law students in many colleges in different parts of the country. It is to be used for this group of persons, for whom it was especially designed in an effort to improve the prediction of subsequent success in law school. It has not been generally available for counselors in high schools and universities who are concerned with the guidance of individual students expressing an interest in the law as a vocation.

Norms.—The most recent norms were issued by the publishers in 1935 and represent scores made by over 1000 law school applicants. Percentile norms are given for scores on the total test and the median, Q_1 and Q_3 scores are given for the separate parts of the test.

Reliability.—No figures have been published.

Validity.—This test is no exception to the rule that no one test alone can predict perfectly that which it purports to measure. As Crawford points out, however, it predicts better than any other single method and is especially useful for negative guidance purposes, to steer away from the law schools those whose chances for successful competition in the bar examinations are slight.

There is some indication that those scoring high will do better work in the law school than those scoring low Some schools have gone so far as to set up critical scores on the basis of their experience with the examination For a small number of students at Iowa, 52 per cent of the grades of students who were in the highest quartile on the test were A's and B's while only 9 per cent of the grades of students in the lowest quartile on the test were A's and B's At that university the correlation between test score and first semester scholarship was + 55 for 100 entering students in law Other investigators (Gaudet and Marryott) report a correlation of + 42 between law aptitude scores and freshman law grades The authors of the test are of the opinion that this law aptitude examination is a better predictive device of subsequent scholarship in the law curriculum than a purely academic intelligence test would be, since the relationship between intelligence and scholarship would probably be less than the usual + 50 for the group of law school students who are relatively more homogeneous than the entire freshman class

Although there are no figures available, it is quite probable that the abilities which are being measured by this test would overlap to a considerable extent those which are measured by the traditional academic intelligence test

Publisher and Cost.—West Publishing Company, St Paul, Minnesota These examinations have been furnished to law schools without charge A limited stock is now available and the publishers do not agree to continue to furnish free copies

References—A B CRAWFORD, "Legal Aptitude Tests," *Illinois Law Rev*, 1930, 24 446–448, F J GAUDET, and F J MARRYOTT, "Predictive Value of the Ferson-Stoddard Law Aptitude Examination," *Amer Law School Rev*, 1930, 7 27–32, G D STODDARD, "Ferson and Stoddard Law Aptitude Examinations—Preliminary Report," *The Amer Law School Rev*, 1927, 6 78–81

4. Tests for Color Blindness, by Dr S Ishihara

Description.—The series of 16 plates which constitute this test are mounted upon heavy black paper which is folded in such a way that the pages may be turned as in a book or removed from the cover and presented simultaneously Each plate is a white cardboard, 4¾ inches square, upon which is printed a colored circle with a diameter of 3½ inches The circle is not a solid color but is formed of many colored dots These dots are

arranged in such a way and are composed of colors in combinations such that they reveal by their design certain numbers to persons with normal color vision and different numbers to persons who are totally or partially color-blind. For example, one plate shows a red figure eight on a green background to the normal eye. This same plate, because of the introduction of orange dots on the left side of the figure, appears to the red-green blind individual to be a three.

The principles which Ishihara used in constructing these plates are that persons with red-green blindness are unable to distinguish the numbers which are printed in red or green on the brown, tan and gray backgrounds, but that they see blues, violets and yellows as brighter than they appear to the person with normal color vision. By arranging the colored dots in the background and in the numbers, Ishihara's plates reveal numbers to both the normal and the abnormal and the diagnosis of the difficulty and its particular variety may be made by the number which the subject reads. Ishihara has controlled the factor of intensity of colors in this test situation so that the numbers cannot be read on the basis of their intensity alone. It is this factor of intensity which makes it possible for the color-blind person to distinguish reds and greens, for example, in many practical life situations.

There are two kinds of color blindness, according to the inventor of the plates: total color blindness and red-green blindness. Few persons are totally color-blind, whereas about 8 per cent of men and less than one per cent of women are blind for reds or greens. The blindness is of varying degrees and in some cases complete. The red-blind person sees as colors only the blues and yellows of the spectrum and is unable to distinguish red from green. The green-blind person is unable to differentiate green from red.

Designed For.—According to the author, the test "is in use to test the sight of railway employees, candidates for the Navy, and others." To this list should be added all those persons who operate vehicles which are governed by the usual red and green traffic signals. Drivers of automobiles and airplane pilots should be subjected to the test. Ability to distinguish colors on the basis of their hues would seem to be necessary for success in many occupations where colors are employed.

Counselors should have this test on hand to administer to male students who might be entering types of work calling for the ability to distinguish colors. Since such a small percentage of women are color-blind, it is not so essential to test them unless one suspects this disability. The entire test requires only a few minutes to administer.

Norms.—The author includes with the discussion of the plates an "explanation" useful in interpreting responses made to each plate. The responses typical of the normal, red-green blind, and total color-blind are given. The diagnosis should be based upon a study of the number and type of errors made. Other authors cited in the references have presented tables showing the responses made by different color-blind subjects. The following results for men reported in the literature may be used as norms.

Investigators	Groups tested	Number tested	Number color-blind	Per cent color-blind
Von Planta, Miles, Haupt, Garth	European and American whites	5083	416	8.2
Miles and Craig	Drygoods salesmen	375	27	7.2
Copeland	Unemployed nonunion painters	386	31	8.0
Copeland	Unemployed union painters	232	9	3.9
Copeland	Unemployed truck drivers	1076	72	6.7
Copeland	Unemployed chauffeurs	104	6	6.0

Reliability.—No figures on the test's consistency are available in the literature, but an unpublished study conducted in the University of Minnesota Department of Psychology laboratory course indicated that the test-retest correlation is over +.90.

Validity.—The test's validity is an inherent feature of its construction. Men are separated on the basis of their responses to the items into two groups of approximately 8 and 92 out of every 100. If a check-up were made by asking the same subjects to compare color in an actual life situation, the two groups would undoubtedly be constituted of the same members on the basis of

their responses, provided that, in the selection of colors in the check-up, the choice were made on the basis of hue alone and not intensity In other words, the test sets up a standard and controlled situation comparable to the everyday situation, whereby an individual is judged as color-blind or not according to his ability to distinguish reds from greens, for example

Further research is needed to determine the extent to which color blindness interferes with successful occupational adjustment A recent report from the Cincinnati Employment Center (Copeland), as well as the report by Miles and Craig, suggests that color blindness may not be a bar to employment in occupations presumably requiring normal color vision This suggestion arises from the fact that a rather large percentage (6 to 7 per cent) of salesmen of silk goods, and truck drivers and chauffeurs were found to be color-blind To what degree these workers were handicapped in their work was not revealed, however One may infer from Copeland's results on painters that freedom from color blindness may be a desirable trait, in view of the fact that color blindness among union painters was only one-half as prevalent as among nonunion painters

Publisher and Cost—C H Stoelting and Company, 424 North Homan Ave, Chicago, Illinois Price, $7 50

References—J H Clark, "The Ishihara Test for Color-blindness," *Amer J Physiol Opt*, 1924, 5 269–276, S Ishihara, *Tests for Color Blindness*, 5th ed, selling agent, C H Stoelting & Company, Chicago, Illinois, W R Miles, "One Hundred Cases of Color Blindness Detected with the Ishihara Test," *J Gen Psychol*, 1929, 2 535–543, W R Miles, and H Craig, "Color Blindness in Dry Goods Salesmen," *Personnel J*, 1931, 4 437–449, H A Copeland, "Occupational Differences in Color Blindness," *J of Appl Psychol*, 1935, 19 490–492

5. Dynamicube Test of Power to Visualize, by Clair V Mann

Description.—A 60-minute test designed to measure power to visualize in terms of three-dimensional spatial relationships, to predict graduation from schools of engineering and architecture, and to test aptitude for college courses in mechanical drawing and descriptive geometry This paper-and-pencil test, in 6 forms, consists of exercises or problems (each with 27 points) in the solution of which the student "thinks," "imagines" or manipulates *mentally* 27 imaginary cubes according to the author's

directions The student's answers to the problem are recorded on a prepared answer sheet

Designed For.—The author standardized the test on 1222 freshman men in the Missouri School of Mines, Columbia, Yale and Iowa State universities, the test has also been used with junior and senior men in high schools

In the references cited below, Dr Mann describes in detail the use of this and other tests for sectioning engineering freshmen on the basis of aptitude and for giving individual guidance In addition, a number of interesting and ingenious charts and record forms for summarizing students' test scores are described and reproduced

Norms.—The following norms were established on 1222 freshman men in four engineering colleges

Percentile	Total score
100	162
75	113
50	61
25	19
1	2

Reliability.—The odd-even correlation (corrected by Spearman-Brown formula) was 970 for 200 freshmen in an engineering college This coefficient is so high as to indicate the need for verification with additional groups The author's distribution of scores (used for computing the reliability coefficient) shows a concentration in the low and in the high ranks with very few in the middle range This tendency to a bipolar distribution may explain the unusual coefficient of reliability

Validity.—The test scores of 166 freshman men in an engineering college correlated + 56 with first semester grades in mechanical drawing, + 59 with first year scholarship, and + 91 with sectioning scores of the drawing classes

Validity of this test is probably more accurately judged from the character of the test itself than from correlation with any criterion at present available The test requires the subject to think intensively about objects and movements not concretely before him, and that is the object sought If he can do that, in the manner the designing engineer does it, then the particular mental process used is not a matter of importance Descriptive geometry is the one course in engineering that, more than any

other, requires this manner of thinking It is presumed that the test would be valid if the correlation between scores on it and grades in descriptive geometry were high The correlations actually obtained are:

Dynamicube test and grades in descriptive geometry	+ 455 ± 050
Dynamicube test and final examination in descriptive geometry . . .	+ 301 ± 058

One weakness in the author's standardization of this and other tests of engineering ability is the failure to correlate scores with tests of intelligence and with standardized mathematics tests, and to combine old and new tests into a battery yielding a multiple correlation and multiple-regression weights These steps are necessary in order to determine the extent to which new tests are measuring unique factors not measured by the other tests, that is, to determine the independent contribution of the new tests to the prediction of the validity criterion This criticism applies to all of Mann's tests

Publisher and Cost —Missouri Educational Test Company, 3027 Locust Blvd , St Louis, Missouri. Prices $4 per one hundred, answer blanks at $1 25 per hundred

References.—C V MANN, "Measurement of Engineering Students," *J. of Eng Educ Res*, 1933, 1 1–14; C V MANN, "Selecting and Guiding Engineering Students," *Civil Eng*, 1936, 6 581–584, C V MANN, "The Evaluation of Placement Examinations," *J of Eng Educ*, *N S*, 1928, 19: 288–300, C V MANN, "Objective Type Tests in Engineering Drawing and Descriptive Geometry," *J of Eng Educ*, *N S*, 1929, 19 979–992, C V MANN, *Objective Type Tests in Engineering Education*, New York McGraw-Hill Book Company, Inc , 1930, DAVID SEGEL, "Prediction of Success in College," *U S Office of Education Bull* 1934, No 15, p 75, Government Printing Office, Washington, D C , C V MANN, "The Problem of Engineering Aptitude," paper presented at 40th annual "World's Fair" meeting of S P E E , Chicago, June, 1933 Twelve-page mimeographed pamphlet

6. Staticube Test of Power to Visualize, by Clair V Mann

Description.—A 90-minute test (6 forms) designed to measure visualizing aptitude required in college courses in mechanical drawing and descriptive geometry. A student is directed (by printed directions) to "imagine" or to visualize a large 15-inch cube subdivided into 125 smaller cubes, each measuring 3 inches on an edge and all numbered The student is then asked to record on a prepared answer sheet his answers to problems involving the rearrangement of these smaller cubes

Designed For.—The author standardized the test on freshman men in the Missouri School of Mines

Norms.—The following norms were established on 500 freshman men in an engineering college

Percentile	Total score
100	296
75	219
50	150
25	99
1	28

Reliability.—The odd-even reliability of the whole test was 91 for 129 freshman men in an engineering college

Validity.—The question of validity is perhaps better determined by the nature of the test itself than by any criterion with which it may be correlated It was intended to measure the ability to visualize which is involved in courses in descriptive geometry The grades in descriptive geometry, of course, do not measure purely the power to visualize, so that no perfect correlation could be expected In view of these circumstances, the following coefficient is considered high The correlation between Staticube scores and term grades in descriptive geometry was 632 for 129 college freshmen

Publisher and Cost.—Missouri Educational Test Company, 3027 Locust Blvd, St Louis, Missouri Prices $4 per hundred, answer blanks at $1 25 per hundred

References.—See references for the Mann Dynamicube Test of Power to Visualize

7. Mutilated Cubes Test of Power to Visualize, by Clair V. Mann

Description.—The test consists of 60 columns of drawings of mutilated cubes, or whole cubes cut one way or another and portions removed to more or less resemble die castings or small machine parts At the top of each column is a direct top view of the mutilated cube, just below is a front view of the cube The student is directed to judge which, if any, of 4 pictured objects is correctly represented by the top and front views printed just above the 4 pictured objects The author says, "The test may be regarded also as an exercise in translation, converting from ideas expressed in pictorial form to those expressed in the con-

ventional orthographic projectional form, and vice versa. Three-dimensional spatial imagination is required to turn the pictorial views mentally so as to permit of direct comparison with the orthographic views."

The time limit is 50 minutes for either Form *A* or *B* and 100 minutes for the two tests combined; the two forms are printed in the same booklet.

Designed For.—The test is appropriate for junior and senior high school pupils and college engineering freshmen. It was standardized on a large number of freshmen at Texas Technological College and Missouri School of Mines.

Norms.—The following norms were established on 301 freshman men in two engineering colleges:

Percentile	Total score
100	121
75	90
50	73
25	55
1	14

Reliability.—An odd-even coefficient of reliability (corrected by Spearman-Brown formula) of .90 was established on the scores of 150 freshmen in an engineering college.

Validity.—The correlation between scores on this test and grades in descriptive geometry is .43 for 131 cases. Like the other tests of visualization, validity can perhaps be as well based upon the nature of the test itself as upon correlation with grades in descriptive geometry.

Publisher and Cost.—Missouri Educational Test Company, 3027 Locust Blvd., St. Louis, Missouri. Prices: Test booklets for $0.15 each; answer blanks at $1.25 per hundred.

References.—See references for the Mann Dynamicube Test of Power to Visualize.

8. Engineering Drawing Aptitude Placement Test, by Clair V. Mann

Description.—A 90-minute test designed to measure a student's aptitude for courses in engineering drawing and for general success in engineering colleges. The test consists of some 240 items which sample the student's knowledge of drawing instruments, plane geometry and geometric constructions. The test consists

of text material in engineering drawing which the student reads and then answers questions based on this reading material.

Designed For.—The test is appropriate for high school junior and senior students and freshmen in colleges of engineering.

Norms.—The following norms were derived from the test scores of 2078 freshman men in a college of engineering.

Percentile	Total score
100	131
75	87
50	71
25	56
1	17

Reliability.—The odd-even coefficient (corrected by Spearman-Brown formula) was .91 for 220 freshmen in the Missouri School of Mines. The probable error of an individual score is 6.41.

Validity.—The author reports, "an average correlation coefficient between the drawing aptitude test scores and grades in engineering is .622 for 159 freshman men." When the final grade in drawing courses was a 200-question objective test, the coefficient of correlation with the aptitude test was .81. The aptitude test correlated .506 with grades in descriptive geometry. When a composite "drawing sectioning score" is made up, using one-half of the score on the drawing aptitude test and one-fourth of the score on the Dynamicube Test, the correlation between sectioning scores and grades in engineering drawing is raised from .622 to .760 (scores of 188 students, class of 1935, fall of 1931), which suggests the proper use of scores on these two tests.

The author reports the following results for the freshmen classes of 1931 and 1932 (a total of 190 students) in the Missouri School of Mines.

22 (21 per cent) of the upper half of the class, as so selected by the Drawing Aptitude Test, out of a total of 105 in that half, were failures so far as they went in their program. 63 (79 per cent) made passing grades. 80 per cent of all graduates come from this upper half of the class as selected by this test.

In the lower half of the class as so set up by the Drawing Aptitude Test, 62 (77.5 per cent) of the group were failures. 18 (22.5 per cent) were successes so far as they went. Only 10 per cent of this entire group graduated, and of these 75 per cent were above the lowest quarter of the class.

Armsby reports a correlation of 50 between the test scores of 1078 students at the Missouri School of Mines and a scholastic index of all grades received by these students during their entire residence in that school

Publisher and Cost.—Missouri Educational Test Company, 3027 Locust Blvd, St Louis, Missouri Price, $15 per hundred

References.—See references for the Mann Dynamicube Test of Power to Visualize, and H H ARMSBY, "A Ten-year Study of Iowa Placement Tests," *Bull of the Amer Assoc of Collegiate Registrars*, July, 1937 343–354

CHAPTER IX

DIAGNOSIS AND TREATMENT OF EDUCATIONAL PROBLEMS

SELECTION OF CURRICULA AND COURSES

The selection of courses and curricula is the most frequently occurring type of problem in this general problem area Perhaps the reason for this is that it does not constitute a single problem The need for assistance in the selection of courses often reflects a fundamental indecision and lack of orientation as to educational and vocational destination. A student coming for registration advice often has a hazy picture of the direction in which he wishes to proceed and the goal he hopes to achieve The counselor should avoid becoming a mere registration clerk He should be on the lookout for those cases which involve the more complex problems he is equipped to handle In such cases, he will want to proceed as he would with other cases of vocational and educational guidance, he will analyze the person's present status and developmental history, help to diagnose his problems, and map out a long-time plan of action for the student, besides helping him with the immediate problem of selecting courses

Most high school students faced with the necessity for making a choice between a curriculum which will prepare them for college or one which leads to business or mechanical pursuits need this same type of analysis and treatment Indeed, those who do not present questions regarding their selection of sequences may need this type of counseling as much as or more than those who apply for aid with their registration difficulties.

In dealing with problems of selection of courses, the counselor should recognize the value of courses as "tryout experiences" Such experiences may be of considerable help in formulating subsequent vocational decisions For example, a high school student who is considering law as a choice should be encouraged to enroll in courses in history and social studies Success in

these courses, coupled with definite satisfaction in dealing with such course content, may be interpreted as evidence that law would be a good bet, other things being equal Tryout in science courses should increase the pre-medic's prediction of his success in Medical School Similar possibilities for early orientation and experience are abundant in the high school and junior college years Orientation courses should be selected by students who continue to be in doubt in regard to future educational and vocational plans or who are likely to enter a vocation demanding an unusually broad background of information, such as journalism

Should the student exhibit a definite vocational choice that cannot be met by any existing curriculum, it would be well to aid him to work out in detail a long-time program of courses which would yield adequate preparation Every effort should be made to adjust the curricular requirements to meet the needs of the individual student When there is a conflict between the needs of the student and the established curriculum, the curriculum should be adjusted and not the student The recognition of differences in individuals and their needs should be considerable stimulus toward revitalizing the curriculum

STUDY METHODS

As yet there exist few, if any, standardized techniques for the diagnosis of faulty study habits Some work in this field has been done by A C Eurich in devising a check list of study methods used by college students [1] C G Wrenn,[2] and P M Symonds[3] have also worked on the development of study-habit inventories Counselors should be interested in putting some of these diagnostic devices to use or in conducting further experimentation with them.

One helpful device which has been used in the past is to urge students to describe in writing or orally just what particular

[1] EURICH, A C, *The Reading Abilities of College Students*, pp 1–108, Minneapolis University of Minnesota Press, 1931 This includes Studiousness Rating Scale and Results

[2] WRENN, C G, *Study-habits Inventory*, Stanford, California Stanford University Press, 1933 An inventory of thirty items, suitable for use in high school and college, giving percentile norms and scoring key

[3] SYMONDS, P M, "A Studiousness Questionnaire," *J of Educ Psychol*, 1928. 19 152–167

difficulties they encounter in studying, if any. Professor Bird, at the University of Minnesota, contends that such a method is superior to check lists, which tend to suggest to students other difficulties which they may not actually experience. Below is presented his tabulation of study difficulties reported by students in essays which they were requested to write.[4] It serves to bring out the range and frequency of problems occurring most often among students in a "How to Study" class.

STUDY DIFFICULTIES REPORTED BY 115 FIRST-QUARTER FRESHMAN STUDENTS AND BY 56 SECOND-QUARTER FRESHMAN AND SOPHOMORE STUDENTS ENROLLED IN "HOW TO STUDY" CLASSES

Kind of difficulty	First-quarter freshman students		Second-quarter freshman and sophomore students	
	Number	Per cent	Number	Per cent
Cannot concentrate, day-dreaming	94	81.6	47	84.0
Cannot make useful notes	46	40.0	19	34.0
Unable to find a motive for study, lack of interest in courses	42	36.5	17	30.4
Slow reader	29	25.2	15	26.8
Cannot study because of interruptions by other persons	28	24.4	10	17.9
Inability to plan activities so as not to interfere with study hours	28	24.4	6	10.7
Outside work too heavy to allow enough time for study	21	18.3	3	5.4
Procrastination—cannot start to study immediately	20	17.4	10	17.9
Cannot select important points in an assignment	19	16.5	11	19.6
Cannot allot time for the study of courses—neglect of some courses	8	7.0	20	35.7

The counselor should be able to locate some of these problems by means of questioning in the course of the interview. Any voluntary comments made should, of course, be noted and

[4] BIRD, CHARLES, *Effective Study Habits*, p. 195, New York: D. Appleton-Century Company, Inc., 1931.

followed up with the purpose of locating causes as well as symptoms, if possible Many students will complain that they "can't concentrate," for example, and in such cases it is important to determine the underlying conflicts or difficulties which are producing this frequently occurring symptom

Another diagnostic device which is sometimes helpful is the daily time record which can be kept by the student for a given period A sample of one such record sheet is included in Bird's *Effective Study Habits* The counselor who persuades the student to use this device can often point out to the student specific ways in which time is being frittered away. On the basis of such "time-distribution records" the counselor can frequently help the student to budget his time more wisely Sometimes the advice will be, "study less, but study more" In such cases, the counselor will point out the fact that increased total efficiency may result from planning shorter study periods during which the student may be able to work at a higher level of efficiency. Dawdling over books for long periods of time is a pernicious habit that some students seem to acquire

Many persons need help in planning their daily programs and their study schedules It is well to impress upon students the importance of "planned living" Especially for those who are entering upon college life with its fewer restrictions and greater demands upon the individual's own responsibility is it necessary that daily activities be planned Students should be brought to realize that, as one grows older, time becomes a more and more precious asset Even good students may be found who can appreciably increase their study efficiency by recording and analyzing actual time distribution By budgeting hours the student is likely to secure more benefit from the assigned time

By studying such a record of the actual distribution of the student's time, the counselor should be able to locate bad practices and to determine the amount of time spent in studying, as well as how it has been distributed It becomes possible to show the student how his program compares with those of others For example, in one high school, students were found to spend from 8½ to 11½ hours each week in preparation for their classwork; and in a typical university, from 21 to 26½ hours per week were spent in outside study. The amount of time recommended by teachers for a normal program of college work is about 30 hours

per week Knowledge of these facts may help the student to plan and adhere to a reasonable program of study time

Efforts should be made to build up habits of time planning, such as jotting down, each evening before retiring, the program for the next day In a similar way, activities for the coming week should be anticipated and outlined The student should also carry with him some mental image of the more remote activity schedules for the months and even years ahead This type of planning and goal setting should result in more effective as well as more integrated and satisfying living

It follows, of course, that this emphasis on planning could degenerate into a system of building air castles and day-dreaming about great achievements that will be tackled next week, or next month, or next year Here again, the counselor must aid the student to avoid laying plans for the attainment of impossible goals The student's planning must at all times be realistic and in line with reasonable expectations

Reading tests and other achievement and aptitude examinations should be resorted to as a means for discovering difficulties with specific study skills The findings may reveal the need for remedial treatment On the other hand, when aptitudes are low, this condition should be understood and faced frankly. In such cases, one cannot expect, through the development of study methods, to have the student attain a level of achievement much beyond his capacity.

Back of the day-dreaming and procrastination which torment some students is often to be found a problem of motivation Treatment of such problems varies with the individual and no general procedure may be adopted. Where efforts to motivate promise returns in the form of achievement and satisfaction, it is advisable It is sometimes difficult, however, to determine the limits to which one should go in attempting to motivate students Motivation of the positive kind is usually more productive of results in the case of students of high ability who are contenting themselves with mediocre work than with students of mediocre or low abilities. A good method in some cases is to point out the high relationship which exists between school achievement and subsequent business and professional success Charts with data from experimental studies bring this out in a striking way to students.

The apparent lack of motivation in some cases may be due to drives which are spread out in too many diverse directions. The goals which are set up seem to require conflicting types of behavior patterns and the dissipation of effort in different channels. This type of situation results in disorganization, conflict and emotional disturbances which are found to affect the study habits of the individual. Counselors should aid such students to integrate their drives, develop goals and organize their purposes in such a way that their efforts may be mobilized towards achievement in a given direction.

One method for motivating students is to help them set up vocational goals. When one has such a purpose around which an appropriate program can be built, there are fewer chances for efforts' being dissipated for lack of motivation. It is essential that the vocational goal be an appropriate one, in line with the individual's aptitudes and interests, in order for them to become stimuli for increased effort.

Suggestions regarding the physical surroundings making for efficient study may be helpful. The student should learn to set aside some nook where he may retire for study purposes. This spot should be consecrated to study activity. When the same place is also used for non-study activities, such as reading for pleasure, visiting or resting, a conditioning process may set in which will later inhibit the student's tendencies to study. He will associate the place with these other non-study and, perhaps, pleasanter pursuits, and these associations will tend to lure him away from his more serious occupation.

A discussion of effective learning methods may be sufficient to aid some students whose study habits do not require individual attention over a longer time period. The recitation method should be stressed, since the act of reciting to oneself and answering questions on material read reduces the amount of time required for learning and the number of necessary readings to a striking extent. The student should learn to space his learning periods, rather than attempt to master all the details at one sitting. A more effective method is to go over the work several times with intervals of increased length. Lecture and reading notes should be reviewed very soon after they have been taken and then frequent reviews should be provided. Care should be taken to divide study periods into intervals of sufficient length to

reach and maintain maximum efficiency In some cases, where poor achievement cannot be remedied by suggestions made in a few short interviews, it is wise to persuade the student to enroll in a "How to Study" course It is far more economical to organize "How to Study" courses and to individualize the work within such courses than it is for the counselor to attempt to undertake the work with individual students The organization of such a course is a natural outgrowth of the counseling program In such a course, effective study methods should be stressed and individual attention should be given the student to aid him in mastering the principles laid down Instructions and practice in effective note taking should constitute one part of the program, in order that poor habits may be corrected early in the student's career Most students can profit from such a program, provided their general academic ability is not too low and the desire to improve their habits is genuine

The amount of space devoted to the topic of study habits in this chapter is primarily due to a conviction that the public school system has tended to neglect this important topic Innumerable "bright" students seem to be able to survive elementary school and high school without acquiring efficient study habits Their brightness seems to be their undoing, because it has enabled them to absorb enough from teacher-directed drills and classroom discussions to "get by" with passing marks Counselors, who are alert to this situation, should see to it that this problem is attacked in a systematic and effective manner throughout the high school years

THE NON-ACHIEVER AND THE SUPER-ACHIEVER

Discrepancies between aptitude and achievement may be discovered by means of objective test results and reliable measures of accomplishment Whenever accomplishments are found to be far below expectations, or when accomplishments are found to be much greater than one would anticipate, there is likely to be found a well-developed or a potential problem of educational and emotional maladjustment.

Students with high academic capacities and poor achievement present some of the most difficult problems with which the counselor must deal It is necessary to determine the causes for such poor achievement Lack of motivation constitutes an

important one. In many cases the student may actually be achieving in endeavors outside of the academic field. If energy is being expended upon other worth-while activities, such as are provided in the extra-curricular opportunities of the college, it may be unwise to urge the student to raise his academic achievement from C to A level. He may be deriving more benefit from his experience in debate, dramatics or work on publications than he could obtain from additional time spent in study. He may be discovering and exercising special talents which will be of advantage in his later occupational and leisure-time activities. Educational practice has tended to overlook the development of special traits of the individual in an effort to bring the classroom achievement up to a certain standard. This has resulted in a leveling which may not be desirable. Outstanding capacities should be developed, thus making for greater individual differences. Different occupations require different patterns of traits; hence, educational institutions should not turn out individuals in a common mold.

When the highly gifted student is doing failing work, the reason should be inquired into. When social activities are consuming too much time, efforts should be made to motivate the student toward higher academic achievement. Failure may be attributed to a lack of goal, and if such is the case, the problem resolves itself into one of aiding the individual to concentrate his activities toward achievement which will lead in the direction of a chosen goal.

Failure to achieve may be a symptom of underlying emotional maladjustments, family situations or social maladjustment. The important thing is to discover the cause before attempting to eliminate the symptom.

The student of poor ability who achieves beyond expectations is often not recognized as a problem, but may easily develop into one. Knowledge of college aptitude test records helps to locate such cases. Occasionally there may be someone who manages to make high grades with a very low scholastic aptitude test score. A retest is advisable in such cases, since emotional factors or environmental conditions may have combined to produce an unreliable result. Where the discrepancy is real, the student's time schedule should be carefully examined to make certain there is a balanced program of activities which will

lead to satisfactory life adjustments The student should be led to understand that there are other desirable ends to be achieved besides those of scholastic success and provision should be made for such opportunities

POOR SCHOLASTIC APTITUDE

The determination of scholastic aptitude is a problem which has received considerable attention and, fortunately, there have been devised a number of techniques which are sufficiently reliable and valid for diagnostic and predictive purposes In general, there are three devices which have proved most useful teachers' grades, standardized general achievement test results and scholastic aptitude tests

In the past, the emphasis has been upon using these devices to predict future scholastic accomplishment The grades which a student makes in high school have usually yielded higher correlations with college scholarship than have entrance tests Scholastic aptitude tests and academic achievement tests rank second in their ability to predict subsequent academic progress. When more than a single device can be used, a combination of high school grades, general achievement test scores and intelligence test results is very effective in picking out potential academic failures with a minimum of error

Dean J B Johnston found that over a period of four years, only six students, or 4 per cent of 140 arts college freshmen, with college ability ratings in the *lowest quarter* of the distributions had managed to graduate from the arts college [5] From this it is evident that college failure can be predicted from these results far better than it could have been predicted in the absence of such quantitative data.

It is not true, however, that failure can be expected of all students who stand poorly on a single test of scholastic aptitude and past scholarship One study,[6] in which records of students of less than average college ability (less than 40th percentile) were

[5] JOHNSTON, J B, and E G WILLIAMSON, "A Follow-up Study of Early Scholastic Predictions at the University of Minnesota," *School and Soc*, 1934, 40 1–8

[6] BOARDMAN, C W, and F. H FINCH, "A Study of Case Histories of Students of Low College Ability Ratings," *Minnesota Studies in Articulation*, University of Minnesota Committee on Educational Research, Minneapolis, 1937, pp. 1–19

followed up, indicated that one-fourth managed to graduate from some college Subsequent vocational histories show that these students make a satisfactory and, in some cases, a superior vocational adjustment The majority entered sales, clerical and miscellaneous occupations, including marriage These are occupations that do not necessarily require high intellect or even college training This study should be a warning to counselors to recognize that errors must necessarily inhere in predicting one variable from another when the relationship between the two is actually far from perfect. The chances for making correct predictions may be increased, but they do not reach certainty with the fallible data with which we deal. But exceptions to any general rule do not constitute evidence of lack of guidance values in existing predictive devices It would be a mistake for counselors to accept this study as providing any warrant for the perpetuation of a "hitch-your-wagon-to-a-star" philosophy of education or for the further encouragement of students to plan their educational programs solely in terms of ambition, desire, hopes and irrational faith in higher education as the open sesame to success in life

When the counselor has reason to suspect the reliability of a low test score, the student should be referred for a retest on another form of the test or on another measure of the trait. Even if the low test score is confirmed, the counselor may find that the student possesses some special aptitude In such a case, the counselor's judgment of the student's ability to do college work may be modified. Generally, the more facts one can gather about the individual, the more accurate will be the estimate of his probable success

The prediction of academic ability should be based on a clinical study of the case, involving objective measurements and subjective judgments in as many behavior areas as possible This clinical study should be made in order that the counselor may aid in adjusting the opportunities to the needs of the individual Too much emphasis has been placed in the past upon the mere prediction of accomplishment and too little effort has been expended toward assuring *adequate* accomplishment Prediction implies a rigid, standardized and inflexible curriculum, with no means of adjusting to differences in needs, aptitudes and interests of students The counselor should not be primarily

concerned with attempting to predict what a given individual will do in a given set of standard conditions. His primary concern should be so to manipulate the conditions as to meet each student's needs. It surely is not a desideratum for prediction to be perfect and adjustment lacking, as in the case of predicting failure. The counselor should be concerned with effecting a maximum adjustment. Prediction then, becomes of secondary importance.

This means, of course, that the counselor should be alert to new ways for liberalizing the curriculum and adjusting it to fit the needs of students. At the secondary school level he should use his influence toward providing differential curricula, terminal courses, sectioning of classes and other means for giving opportunities to all his counselees who are retained in the school system through no desire of their own and who are entitled to educational offerings in proportion to their abilities to profit from them. Counselors in colleges should encourage similar moves to make the curriculum fit the students. Terminal courses at the end of the junior college are just as important as are preprofessional courses. Colleges and universities should direct their efforts toward providing profitable opportunities of a cultural and vocational nature to all their students with a genuine interest in learning, rather than merely in turning away a larger or smaller percentage because it "predicts" they won't be able to make the grade.

When it becomes necessary to counsel with the student of low aptitude who has chosen a goal out of all proportion to the probability of success the counselor must present the facts in as straightforward and yet as tactful a way as possible. Although the "Pollyanna" attitude is to be avoided, nothing is more despicable than tactless deflation of a person's ego. When necessary, the successful counselor manages to bring the student around to the point where he will see the advisability of substituting a new and more appropriate goal for a less appropriate one. It is, of course, inadvisable to use the term "intelligence" when pointing out deficiencies for the usual school setup. "Intelligence" connotes meanings to the student which are closely tied up with emotional attitudes. Fortunately, most intelligence tests are heavily weighted with vocabulary items and the student recognizes that vocabulary is something which can be

improved with effort He is not so apt to react emotionally when told that his "vocabulary" may be too low for a certain goal. He is more willing to accept low scores when it is pointed out that students with high scores are those who have read widely inside and outside of the school situation—those, in short, who are "bookishly inclined" or "academically minded" If he is desirous of improving his vocabulary, then specific suggestions should be given as to methods for improving his word knowledge.

Those individuals with limited "vocabularies" constitute such individual types that it is impossible here to make general suggestions as to treatment When the school situation cannot be changed, the counselor may need to redirect efforts towards nonacademic training or experience Some of these persons may possess other aptitudes, interests or ambitions along special lines, so that a careful selection of courses which will require a maximum of these special capacities and a minimum of "word knowledge" may yield the solution.

READING DISABILITIES

A survey of Stanford freshmen and transfer students[7] revealed that three major problems are: (1) standards of work, (2) inability to budget time, and (3) slow reading habits One-third of the students checked this last item, indicating that this difficulty applied to them Certainly, poor habits of reading are not restricted to Stanford students and yet counselors seldom recognize reading disabilities or suggest treatment Undoubtedly, students themselves are apt to recognize such disabilities more readily than an outsider who does not have available objective reports of reading speed and comprehension Some basis for the student's concern regarding these habits is afforded by results of reading tests indicating tremendous individual differences in both speed and comprehension of reading It is not uncommon to find students in any college year who read more slowly than the average eighth-grade student Such poor scores may underlie school failures in some cases, although, occasionally, good students also are found to be exceptionally slow readers

[7] WRENN, C G, and MILDRED GARRETT, "Adjusting Youth to College Life," *Occupations, the Vocational Guidance Magazine*, 1934, 12 38–41

The great improvements that have been effected by training hint that the cause may lie in mere inefficiency due to lack of effort or stimulation Another cause of slow reading is the tendency to vocalize or to use inner speech Reading with lip movements or calling up auditory images of words perceived requires more time and slows up speed and possibly comprehension

A poor vocabulary is one of the chief causes of poor reading speed and comprehension The student who does not readily recognize word and phrase meanings must fixate unfamiliar terms for a longer period A poor vocabulary is usually a symptom of poor academic intelligence, but occasionally we find a student whose achievement and capacity in other fields indicate that the vocabulary has suffered, while development of specific traits has progressed normally Such students should be motivated to improve their word knowledge, as this supplies them with the tools with which they may think and convey meaning to other persons Extensive reading, with an intelligent use of the dictionary, is perhaps the most effective method Motivation, as usual, is of prime importance

Poor reading habits are readily diagnosed by objective measurement Appropriate tests for speed and comprehension of reading should be resorted to whenever a reading difficulty is suspected Norms established on students of various school levels enable comparisons which are interesting and stimulating to the student In cases of more serious disabilities, photographs of movements of the eyes as they progress along the printed line may be helpful Regressions and irregular fixations of the eyes are symptoms of poor reading Some workers in this field claim, however, that the difficulty is not in the peripheral eye mechanism but rather in central factors involved in perception

Improvement in reading speed is possible for most student readers, provided the incentive is sufficient [8] One cannot predict the improvement which an individual will make, but it will usually range from 25 to 50 per cent, with extended daily practice and effort to remove the causes of the slow reading Subvocal and actual articulation of words should be eliminated An

[8] Wrenn, C G and L Cole, *How to Read Rapidly and Well A Manual of Silent Reading*, pp 1–16, Stanford, California Stanford University Press, 1935. Price, $0 15. See also C Bird, *op cit.*

extended and long-time program for vocabulary improvement should follow and frequent progress checks be made to encourage the learner Usually reading comprehension, as well as scholarship, shows a parallel improvement as speed of reading improves

Where the counselor is unable to direct such practice, the student should be encouarged to enroll in a "How to Study" course, where individual attention to this problem should be given Instructors of these classes should be informed as to the counselor's findings, in order that more effective training may follow adequate individual diagnosis

SPECIFIC SUBJECT-MATTER DISABILITIES

Special difficulties of this nature are easily noticed and diagnosed Symptoms appear in failing or low marks in course work and in complaints made by the student himself Another diagnostic aid is the achievement test, which should be administered in cases of failure in special fields such as English, mathematics or foreign language Where there is a discrepancy between classroom marks and achievement test scores, the causes for failure must be discovered elsewhere A conference between counselor and course instructor may be helpful In cases of low aptitude, the program must be better adjusted or remedial training provided Just as we find persons with outstandingly high aptitudes along certain lines, so also there are others with specific disabilities To bring all the individual's traits up to a common level is inadvisable, if not impossible The student with little aptitude for mathematics should be encouraged to avoid an occupational choice requiring more than a minimum amount of this ability and to capitalize on those other capacities which he possesses to a greater degree In some cases it may be advisable to encourage some improvement, where the low ability is apt to be a definite handicap Where the college freshman's knowledge of English usage is poor, improvement is often effected by registration in a sub-freshman English course. Such procedure is warranted when desire to improve is evident Here, again, the "How to Study" course may be a boon to the counselor Individual help with specific subject-matter difficulties is occasionally rendered Tutors are sometimes necessary

CHAPTER X

TREATMENT OF VOCATIONAL PROBLEMS

The counselor must systematize his approach to the treatment of vocational problems He should acquire a maximum of information regarding the world of work (especially detailed knowledge of source material) and he should become skilled in the techniques for disseminating this information In addition, he must be able to interpret available occupational knowledge in such a way as to assist the student as an individual In other words, the counselor must individualize vocational guidance services just as the school must individualize its educational program

A TECHNIQUES FOR SECURING AND IMPARTING OCCUPATIONAL INFORMATION

Note —These techniques should not be used unless students have first been diagnosed and counseled regarding their aptitudes for job training and placement It is decidedly unfair to stimulate students to think of their occupational future unless they have first been given an understanding of their own assets and liabilities As a result of diagnosing and counseling, students will be able to narrow their search for occupational information and also will be prevented from making unwise choices which can lead only to failure and disappointment Personnel workers should be the first to abandon group methods of instruction, which are based upon the naive assumption that teaching can ignore individual differences For these reasons, therefore, individual diagnosis and treatment should precede, or at least parallel, the dissemination of vocational information

1. Analysis of Occupational Census Data.—It is obvious that the U S Census of Occupations is a mine of information in spite of the fact that there are serious technical difficulties standing in the way of a clear-cut analysis of these data The Committee on Social Trends has published a useful analysis[1] and the National

[1] *Recent Social Trends in the United States*, Chapter VI, pp 268–324, "Shifting Occupational Patterns," by Ralph G Hurlin and Meredith B Givens, one-vol ed., McGraw-Hill Book Company, Inc , New York, 1933.

Occupational Conference in cooperation with the Personnel Research Federation[2] has carried this type of analysis still farther Studies made by the Minnesota Employment Stabilization Research Institute should be consulted as a sample of what can be done with U S. Census data for a given locality [3] The Occupational Research Program of the U S Employment Service is now engaged in developing a periodic census of occupational trends through the analysis of millions of applications for employment and of job placements in public and private employment [4]

Brief mention of some of the more striking findings will indicate the value of these studies as a means of keeping a counseling service abreast of developments in the labor market The following two tables summarize the main facts presented in *Recent Social Trends*

Type of work	Number of workers, 16 years and over		
	1870	1900	1930
Manufacturing, mechanical, construction	2,674,000	7,537,000	13,790,000
Agriculture and allied occupations	6,428,000	9,802,000	10,242,000
Trade and transportation	1,104,000	4,445,000	9,963,000
Domestic and personal service	1,168,000	2,726,000	5,448,000
Clerical service	206,000	781,000	3,935,000
Professional service	338,000	1,196,000	3,110,000
Mining	172,000	576,000	983,000
Public service (not otherwise classified)	73,000	260,000	692,000
Total	12,163,000	27,323,000	48,163,000

[2] *Occupational Trends in New York City*, published by National Occupational Conference, 551 Fifth Ave , New York, 1933

[3] STEAD, W H , and D BJORNARAA, "Employment Trends in St Paul, Minneapolis, and Duluth," *Bulletins of the Employment Stabilization Research Institute*, 1931, Vol 1, No 2, Minneapolis University of Minnesota Press, and HANSEN, A H , and T M SOGGE, "Occupational Trends in Minnesota," *Bulletins of the Employment Stabilization Research Institute*, 1933, Vol 2, No 3, Minneapolis University of Minnesota Press

[4] *Filling Nine Million Jobs*, prepared by the Division of Standards and Research of the U S Employment Service, U S Department of Labor, Government Printing Office, Washington, D C , 1937, and *Who Are the Job Seekers?* prepared by the Division of Standards and Research, U S Employment Service, U S Department of Labor, Government Printing Office, Washington, D.C , 1937.

The preceding tabulation reveals marked increases in all occupational groups. Nevertheless, some groups have increased at a much more rapid rate than others It is this shift in rate that points to the relative decline in importance of agriculture and mining and an increase in importance of most of the other groups This shift is revealed by the following table showing the percentage distribution of gainfully occupied persons, 16 years of age and over, classified by occupation in 1870 and again in 1930

Occupational groups	1870	1930
Manufacturing, mechanical, and construction	22.0	28.6
Agriculture and allied occupations	52.8	21.3
Trade and transportation	9.1	20.7
Domestic and personal service	9.6	11.3
Clerical service	1.7	8.2
Professional service	2.7	6.5
Mining	1.5	2.0
Public service (not otherwise classified)	0.6	1.4
Total	100.0	100.0

Even more striking shifts in relative importance appear when the above groupings are broken down into specific occupations A word picture of the more striking trends toward increase is as follows

Trade and transportation salespeople, store clerks, insurance and real estate agents, commercial travelers, bankers and brokers, steam and street transportation workers, telephone and telegraph operators, street railroad operators, 802 per cent increase.

Clerical service. shipping clerks, office clerks, bookkeepers, accountants, stenographers and typists, 1809 per cent increase

Public service teachers, clerical workers, officials and inspectors, policemen and firemen, 848 per cent increase.

Domestic and personal service. launderers, laundry workers, barbers, hairdressers, boarding-house keepers, janitors, elevator tenders, servants including waiters, 367 per cent increase

Professional service technical engineers and electricians, craftsmen and designers, chemists and metallurgists, dentists, trained nurses, musicians and music teachers, artists and art teachers, actors, librarians, authors, 820 per cent increase

Manufacturing and mechanical industries: semiskilled machine operators, and semiskilled assembly workers, 416 per cent increase.

The above shifts reflect the rapidity of technological advances being made in production with increased services in the areas of distribution and finance Altogether, these advances make possible the employment of an increased proportion of the gainfully occupied in providing cultural, recreational and leisure-time services

The facts about occupational trends are admittedly important as a means of revealing expanding occupational opportunities Another purpose may be served by such figures if local school authorities will compare the expansion of vocational training facilities with the expansion in effective demand Surveys of vocational choices made by junior high school and senior high school pupils and college students can also be compared with available opportunities as a means of determining the extent to which the educational and vocational guidance program is producing realizable vocational aims and ambitions among present-day students All such comparisons as are here suggested will tend to reveal the unrealistic character of modern education There is everywhere a striking failure to gear the educational machinery to the needs of an industrial civilization

Another type of occupational study is helpful in permitting the school to give youngsters a realistic view of the world of work This world of work, if viewed through the eyes of youngsters, appears to be an inverted pyramid in which job opportunities expand rapidly in number as one ascends the occupational scale from laborer to bank president or from unskilled work to the major professions. The cold facts, however, are quite the reverse. For example, the picture for Minnesota according to the 1930 census is as shown in the table on page 275

2. Local Surveys of Job Opportunities.—Local surveys should be undertaken by school authorities in order to discover special types of training that should be provided by the school

to meet local needs. For example, the Junior College at Rochester, Minnesota, has developed an effective training course in medical secretarial work to meet the needs of the Mayo Clinic. The Rochester, New York, Athenaeum and Mechanics Institute has also built its curriculum to meet the needs of local employers.

It is the duty of the vocational guidance counselor to undertake these local surveys with the help of job survey committees of teachers and businessmen.

Occupational Groups	Percentage Distribution, 1930
Professional workers	8.3
Proprietors and officials	8.8
Farmers	18.7
Farm laborers	11.9
Low-salaried workers (clerks, etc.)	14.9
Industrial wage earners	29.0
Servants	4.0
Unclassified workers	4.4
Total gainfully occupied 992,798	100.0

3. Personal Study of Occupations.—The counselor can frequently aid a youngster in his quest for occupational information by suggesting that a personal study be made of occupations that seem to interest him. Such personal study should include available information in the library, but it should also include interviews with actual workers and employers.

4. Occupational Bookshelves.—A bookshelf of occupational books should be maintained in the school library, as well as in the public library. Counselors will find librarians eager to prepare such bookshelves. The counselor should be prepared to suggest suitable books for purchase. The counselor should also keep abreast of new books and pamphlets by consulting current issues of *Occupations, the Vocational Guidance Magazine*, the *Occupational Index*, and the *Abstracts and Appraisals of Occupational Information*. All of these are published by the National Occupational Conference, 551 Fifth Avenue, New York. A basic reference book is W. E. Parker, *Books About Jobs: A Bibliography of Occupational Literature*. This book covers 8500 classified and annotated references and is published by the American Library

Association, Chicago, Illinois, for the National Occupational Conference

The following references may be found helpful

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ALLEN, F J *A Guide to the Study of Occupations*, Cambridge, Massachusetts Harvard University Press, revised, 1925.

HAUSEN, M Q, and M R LINGENFELTER *An Annotated Bibliography of Vocational Fiction*, Columbus, Ohio Bureau of Educational Research, Ohio State University, 1932

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PARKER, W E *Books about Jobs A Bibliography of Occupational Literature*, Chicago American Library Association, 1936

———, and D H MOYER *Vocational Information* (Vocational Series 1) Ann Arbor, Michigan University of Michigan, 1928.

White House Conference on Child Health and Protection, *Report of Subcommittee on Vocational Guidance*, "Occupational Studies," pp 89–137, New York D Appleton-Century Company, Inc, 1932

Books and Articles Describing a Number of Occupations.

ADAMS, ELIZABETH *Women Professional Workers*, New York The Macmillan Company, 1921.

BINGHAM, W V "Abilities and Opportunities—Some Meanings of Trends in Occupational Distribution," *Occupations, The Vocational Guidance Magazine*, 1934, 12 6–17

BINGHAM, WALTER V *Aptitudes and Aptitude Testing*, New York Harper & Brothers, 1937 This book includes a comprehensive summary of abilities necessary for success in mechanical, clerical and business occupations and the professions of law, medicine, and teaching The information is derived from research studies The author also shows how a counselor may help students determine if they possess the necessary qualifications.

CRAWFORD, A B, and S H CLEMENT *The Choice of an Occupation*, New Haven Yale University Press, 1932 This book is especially recommended for college men, particularly those who are interested in business or in one of the older professions

FILENE, C *Careers for Women*, Boston Houghton Mifflin Company, 1934 (Revised edition)

FLEISHMAN, D E *An Outline of Careers for Women*, Garden City, New York Doubleday, Doran & Company, Inc, 1931

HATCHER, O L *Occupations for Women*, Richmond Southern Women's Educational Alliance, 1927

KITSON, H D "Contemporary Biography for Use of Vocational Guidance," *Teachers College Record*, 1933, 35 25–32.

LOGIE, IONE *Careers in the Making*, New York Harper & Brothers, 1931. A classification of current biographies as a source of occupational information

OAKLEY, C A, A MACRAE, and E O MERCER *Handbook of Vocational Guidance*, London University of London Press, 1937 This book is one of the few books that attempt to give a picture of occupational requirements in terms of the human abilities necessary for success

PRESIDENT'S RESEARCH COMMITTEE ON SOCIAL TRENDS, *Recent Social Trends in the United States*, New York McGraw-Hill Book Company, Inc, 1933

WILLIAMSON, E G *Students and Occupations*, New York Henry Holt & Company, 1937 This book is one of the few sources of information which lay proper emphasis upon the abilities necessary for success Since major attention is given to types of work requiring college preparation, it is best adapted for use with senior high school students and college students

As noted above, it is a rare thing for books on occupations to contain useful information in regard to the human abilities requisite for minimal success Most books do give, however, statements in regard to abilities, but the statements themselves are exceedingly vague and general or are based on arm-chair speculation The vagueness of statement is usually due to lack of precise knowledge regarding the *degree* to which any trait is really necessary. The statement that a given ability is required, without specifying the degree or amount, is not helpful, since almost every ability is required in some amount greater than absolute zero in almost every known variety of work The result is that such statements, when made about any given job, are found to apply equally well to a vast array of jobs For example, the reader is invited to speculate as to what occupation or job is meant by the following description

ABILITIES AND QUALIFICATIONS REQUIRED

Any youth entering the ______ business will succeed in proportion as he

has good health, strength and endurance
is interested in the work
is of a mechanical, or even inventive, turn of mind
likes to work with tools
has a good mind
is mentally alert
is industrious and persevering
gets along well with other people
is thorough, accurate and careful as a workman

While he must be able to use a wide variety of hand tools, no very great manipulative skill is necessary, such as is required in the machine trades.

When the above statement is presented to students especially interested in problems of vocational classification and analysis, a bewildering variety of answers is elicited and only rarely is the correct answer hit upon The right answer is contained in the title of the reference given below as a footnote [5]

5 Courses on Occupations.—These courses have been developed under a variety of titles, to serve as a means of occupational orientation They are usually introduced at the junior high school level and may be repeated at the senior high school and junior college levels The chief limitation of such courses is the apparent fact that immature high school students do not seem to acquire much useful occupational information.[6] Lincoln, however, has shown that her course in Occupations at the high school level produces significant gains, especially when the class meets five days a week [7] Williamson[8] has shown that a course in Occupations at the junior college level may be so organized and conducted as to yield a significant gain in occupational information and in knowledge about how students may and should choose vocations

It is possible that occupational information courses on the high school level could be equally effective were they organized to give a maximum of information about the traits essential for success Most high school courses tend to neglect this vital information,[9] although Allen's group guidance approach is an exception [10]

6. Vocational Information Conferences.—This technique brings to the school experienced workers, who lecture to groups of students or conduct round-table conferences in regard to a given

[5] *An Appraisal and Abstract of Available Literature on Plumbing*, National Occupational Conference, 551 Fifth Ave , New York, 1936

[6] KEFAUVER, G N , and H C HAND, "An Appraisal of Guidance in Secondary Schools," *Occupations, The Vocational Guidance Magazine*, 1933, 12 1, 53–57

[7] LINCOLN, M E , "Measuring Outcomes of the Occupations Course," *Occupations, The Vocational Guidance Magazine*, 1933, 12 4, 36–40

[8] WILLIAMSON, E G , "A College Class in Occupational Information," *School Rev.*, 1937, 45: 123–129

[9] LINCOLN, M E , and J M BREWER *How to Teach Occupations*, Boston Ginn and Company, 1937

[10] ALLEN, R D , *Inor Group-Guidance Series*, especially Vol III, "Self-Measurement Projects in Group Guidance," New York. Inor Publishing Company, 1934

vocation The discussion usually dwells at length on such matters as duties and responsibilities, opportunities for promotion, training required, remuneration to be expected, etc The technique itself is not enthusiastically endorsed here, because it tends to center attention on the occupation without indicating to the student the criteria whereby he can decide whether or not it is an appropriate opportunity This is true because experienced workers are apt to stress their own personal experiences, since they lack the vocational and psychological knowledge necessary for a meaningful discussion of the qualifications required Another drawback sometimes appears when a fluent and persuasive speaker injects an emotional tone into the presentation It is a good technique, however, for enlisting the interest of businessmen and professional men of the community in the school's vocational guidance program

7. Referral of Students to Experts.—Many guidance workers make extensive use of this technique For example, a boy interested in journalism is sent to an editor for discussion of that field of work, or he may be sent to the head of the Department of Journalism in the college Undue reliance upon this technique is inadvisable for the same reasons as listed for the preceding topic It is helpful, however, for a guidance counselor to keep a list of such experts who are willing to be interviewed by inquiring students and who can be depended upon to do their part well One definite advantage may be mentioned, namely, such an expert, if sufficiently interested and objective, can frequently give up-to-date information on recent changes and impending changes in the occupation Another possible advantage is that the expert can judge the quality of samples of work produced by the student, such as art objects, musical performance, literary efforts, collections, etc

8. Study of Classified Advertisements.—Mention should be made of the possibility of deriving useful information through a study of classified advertisements in the daily newspaper Such a study should include "Help Wanted," as well as "Position Wanted," advertisements The counselor should make such studies from time to time in order to keep abreast of trends Study of classified advertisements by private educational and training agencies will also reveal the extent to which the local school system is failing to provide adequate vocational training

facilities for its young people. When a school system fails to give sufficient training opportunities in the commercial field, private business schools will be on the job. When the school fails to give adequate training opportunities in the field of music, art, dancing, mechanics, etc, private schools will be found ready to give such service In a sense, the failure of public education can be measured by the number and variety of private schools and private teachers competing in a given locality for the time and money of youngsters and older persons who are desirous of fitting themselves for the world of work

9. Occupational Ability Patterns.—As a result of the research studies conducted by the Minnesota Employment Stabilization Research Institute, by the National Institute of Industrial Psychology in England and by vocational psychologists—from Muensterberg to Link, Burtt and Strong—we are beginning to get a quantitative picture of the pattern of abilities and interests characterizing successful workers in different occupations The guidance counselor must keep abreast of these findings and be alert to translate them into improved diagnoses of the abilities and interests of youngsters seeking help in the choice of a career Substantial progress has been made, so that the counselor is in a far better position today to render service of this type than could have been true ten or even five years ago The factual basis is presented in outline form in several recent books[11] with which the counselor should be familiar

The chief virtue of such patterns is found in the approach It is essentially a psychological type of job analysis in which workers-on-the-job are measured to establish norms The measurement techniques utilized in the job analysis are then available for use with individuals who may be contemplating the advisability of entering the same type of work. Thus, job analysis and man analysis are made in the same set of terms, so that the counselor is able to measure a given individual and com-

[11] PATERSON, D G, and J. G. DARLEY, *Men, Women, and Jobs*, Minneapolis University of Minnesota Press, 1936, EARLE, F M, *The Choice of a Career*, London Methuen & Company, Ltd, 1933; OAKLEY, C A, A MACRAE, and E O MERCER, *Handbook of Vocational Guidance*, London University of London Press, 1937, KELLER, F J, and M VITELES, *Vocational Guidance Throughout the World*, New York W. W Norton & Company, Inc., 1937.

pare his pattern of abilities and interests with those of persons who have succeeded in the work Further research will be needed to explore the full possibilities of this approach. We may look for additional data from the Occupational Research Program of the U. S. Employment Service, which is carrying on a most intensive and comprehensive study of workers and jobs

Vocational psychologists in England have recognized the importance of this approach As a temporary makeshift, they have prepared an elaborate occupational rating scale whereby each of 80 vocations has been rated with respect to 23 minimum abilities and other qualities required [12] Counselors will find these results suggestive and valuable as a basis for interpreting the occupational significance of measurements and estimates of abilities and other qualities which are obtained through the vocational interview and testing situation Admittedly, the "table of standards" is at the present time highly subjective It is far less dependable than it would be if the minimum ability standards had been derived from actual measurements of successful workers on the job Since it will be a long time before such elaborate objective approach will be completed, it is likely that this table will be exceedingly helpful as a point of reference

B TECHNIQUES FOR APPRAISING THE EFFECTIVENESS OF GUIDANCE PROGRAMS IN SCHOOLS AND COLLEGES

The attention of counselors is directed to a new series of guidance tests and inventories prepared by Kefauver and Hand as a means of appraising the effectiveness of guidance programs in schools and colleges [13] There are five tests designed to measure a student's information and judgment with respect to the guidance services available in the following guidance areas Education, health, recreation, citizenship, and vocation A sixth test measures the gullibility of the student with respect to pseudo guidance and to false and misleading advertising. In addition, two inventory blanks are provided for recording a student's educational and vocational plans and his judgments of his own capacities

[12] OAKLEY, MACRAE, and MERCER, *op cit.*, pp 130–137

[13] KEFAUVER, G N, and H C HAND, *Kefauver-Hand Guidance Tests and Inventories*, published by the World Book Company, Yonkers-on-Hudson, New York, and Chicago, Illinois, 1937, *Manual*, six tests (two forms each) and two inventories

The reliability coefficients for the six guidance tests (test-retest using the two comparable forms of each test) range from + 77 to + 89, with an average value of + 82 The probable error of an obtained score ranges from 2 0 to 3 0, with an average value of 2 5 Norms are not provided by the authors, presumably because they do not believe that guidance services are sufficiently well developed in most schools to warrant acceptance of present-day student performance as a standard In all probability the publication of norms in the present unsatisfactory status of guidance services would tend to freeze or crystallize guidance services on a low level of efficiency The purpose of the tests is to reveal present deficiencies so that administrators and counselors can organize a program that will become increasingly effective in the future Some counselors may find them valuable as a device for collecting case-history data prior to the guidance interview

C. TECHNIQUES FOR DIAGNOSING VOCATIONAL APTITUDES

1. Tests and Measurements.—It is well to mention again that the diagnosis of vocational fitness must be based upon a detailed knowledge of the personal assets and liabilities of the individual, interpreted in the light of occupational requirements In presenting available tests and measurements in the preceding chapters we have already emphasized the educational and vocational guidance significance of information secured by their use In this section, therefore, we shall merely point out types of vocational problems that can be attacked on a measurement basis A more detailed treatment is available in Williamson and Darley's *Student Personnel Work*

Counselors are frequently confronted by students who exhibit a discrepancy between a vocational goal and the abilities necessary to achieve that goal It is obvious that measurement data will enable such students to compare themselves with norms established for workers in the vocation Of more importance is the presentation of data that will enable the student to compare himself *in a favorable light* with workers in other occupations In this way direct deflation is minimized and the attention of the student is directed toward lines of work in which there is a greater likelihood of success Not only must the student's attitude be redirected in this way, but the counselor must frequently point

out additional advantages inherent in the new goal. For example, it is sometimes helpful to point out to the student that it is better to be a first-class mechanic than to be a third-rate lawyer

A different problem confronts the counselor when the student appears to have chosen a vocation that will not utilize his available talents to the utmost Again, the counselor must direct the student's attention to types of work that will offer a more definite challenge to his capacities.

When instances of vocational indecision are dealt with, the counselor can frequently aid the student to make a decision by a detailed discussion of the student's make-up in relation to suitable or appropriate lines of work It must be understood, of course, that the effective counselor never makes a decision for the student, but rather he aims to present available facts and probabilities in the hope that the student will come to recognize the desirability of a particular goal In many cases, however, the counselor will restrain the student from making a hasty choice and will persuade the student to make a tentative choice or to delay a choice, pending further experience In these cases some of the following techniques may be utilized

2. School Curriculum.—The guidance significance of subjects in the curriculum has not always been apparent to counselors and students. If this possibility be utilized to the utmost, the counselor must have available a cumulative record of marks in previous courses Relative success and failure in the pattern of courses taken will frequently suggest vocational possibilities that would otherwise be overlooked "Hope springs eternal in the human breast," so the counselor may be forced to suggest further subject-matter courses as tryouts, pending more definite vocational decision. In doing so, the student should be persuaded to take courses pointing in several directions in the hope that further mediocre work along a given line may be counterbalanced by far greater success in other types of courses There is every reason to believe that vocational adjustments would be facilitated if high school and college counselors would encourage student experimentation in course elections. To do so on any wide scale means the breakdown of rigid sequence requirements and the mere accumulation of academically respectable credits for graduation purposes It will also require the introduction of an increased variety of courses into the school offerings To

talk about the advantages of "general culture" and "general education" to the son of a skilled mechanic who secretly hopes to succeed in clerical work will not lead to an effective educational experience for the boy nor to a real preparation for one of the most important phases of that boy's life as an adult worker General education and vocational training must be combined if the school is to meet the needs of youth General education plus counseling is only a partial solution

3. Extra-curricular Activities.—In general, school administrators and teachers are increasingly aware of the educational value of extra-curricular activities Such participation is recognized as a means of reenforcing the appeal of classroom work, as for example, foreign language clubs, literary work in connection with the school paper, debating clubs, political science clubs, hobby clubs, etc. In addition, we would stress the vocational significance of such activities from the point of view of tryouts and training The following summary may be suggestive

Activity	Vocations Utilizing Experience Gained in the Activity
Athletics	Professional athletics, physical education positions, including coaching and camp work
Dramatics	Teaching dramatics, work on stage and screen
School paper and annual	Journalism, editor of house organs, etc
School band and orchestra	Various positions in the field of music
School politics	Political careers
Debating	Public speaking aspects of a large number of positions
"Y" work and religious activities in the school	Positions in church work, boys' work, girls' work, social work
Foreign language clubs	Teaching foreign languages, and positions requiring knowledge of foreign languages
Other subject-matter clubs	Positions utilizing given types of subject-matter competence
Social activities	Positions requiring finesse in dealing with people, sales, politics, executive, etc
Hobby clubs	Positions utilizing skills and knowledge acquired in a given type of hobby
Secretarial work, financial management and advertising work in connection with student organizations	Business positions

4. Vacation Job Experiences.—Many a student has laid a foundation for a wise vocational choice through vacation summer jobs. Many boys' club and girls' club workers got their start through jobs as counselors and instructors in summer camps Vacation selling jobs (stores and canvassing) have produced workers fitted for various types of selling Other things being equal, the student who has tried himself out in a variety of vacation jobs is in a position to select vocational training courses in a more realistic way than those who have never had such experience It goes without saying, however, that vocational choices should not be based solely upon such experiences

5. Hobbies and Recreational Activities.—Counselors will frequently find a valuable clue to possible vocational choices in a student's hobbies and recreational activities. These represent "drives" that may be converted into lifelong satisfying vocational activities Strangely enough, many individuals do not recognize the vocational possibilities inherent in their own hobbies, because they recognize that they get fun out of their hobbies, whereas they have been schooled in the doctrine that one's occupation is work and work is a serious business without any fun element This is why the counselor can frequently make an important contribution to the solution of a perplexing vocational problem by pointing out the desirability of utilizing a hobby in one's lifework The following case will illustrate the possibilities A high school graduate who had been engaged in credit work for ten years came to the university for vocational guidance service saying that he was unhappy in his work and would like to shift to a more congenial type of work. He was utterly at sea, however, with respect to alternative possibilities A study of his life history revealed the fact that he was athletically inclined in high school and had continued athletic activities in the local "Y." He was also intensely interested in religious work and at the time of the interview was president of the largest men's Bible class in the city Strong's Vocational Interest Test yielded C ratings in business occupations and science fields but high ratings in teaching and religious fields of work As a matter of fact, he received an A+ rating as a Y M C A. physical director. He was delighted with the suggestion that he might prepare himself to earn a living in "Y" work, since it had never occurred to him that he might capitalize vocationally on the two types of

activity to which he had devoted most of his leisure time and attention

D. TREATMENT OF VOCATIONAL PROBLEMS

It is difficult to distinguish between the diagnosis of vocational problems and treatment As a matter of fact, the preceding section C of this chapter necessarily included suggestions on treatment In this section, therefore, we merely list additional types of problems, together with suggestions for their solution These problems are presented by a listing of frequent or occasional causes of vocational maladjustment

1. Parents.—So much has been written about the "problem child" that it is time to shift attention to the "problem parent," who may be more responsible than the child for difficulties confronting the child At least the vocational counselor must be aware of the fact that the solution of a student's vocational problem can frequently be achieved only through a direct approach to the parent Parents may exhibit poor judgment in sizing up a child's talents (what parent is an impartial judge of his own child?) and hence may urge the child to choose a vocation beyond the child's level of ability Parents are likely to be misinformed in regard to vocational requirements They sometimes try to realize their own thwarted vocational aims through their children In such instances a child may be forced into music as a career, or into art work, or a major profession, even though inclination and talent may be lacking Or a parent may, through "emotional conditioning," exhibit a strong aversion to a particular type of work and go to extreme lengths to prevent the son or daughter from entering that work, even though it be a wise choice Then again, there are instances of family tradition—the boys have always gone into business or into teaching or the ministry or the like. The boy tries to live up to the family tradition and, if he is not fitted for it, faces failure These examples are sufficient to indicate that the counselor must frequently become the impartial interpreter of the student to his parents Fortunately, parents are keenly interested in the welfare of their sons and daughters, a fact which makes it possible for the counselor to intervene successfully when the facts indicate the wisdom of intervention.

2. Teachers.—Teachers sometimes try to influence a student to enter teaching without due regard to the fact that the student's assets may point toward some other vocation For this reason, the counselor may frequently need to stand between the student and teacher, aiding each to take a broader view of available occupational opportunities.

3. Classmates.—Some students select a vocation merely because a classmate chooses that vocation, without regard to whether or not that vocation represents an opportunity for success Here is a striking example. A third-year student in architecture sought vocational advice because he was failing. He had entered architecture because his pal entered engineering When quizzed as to why he did not enter engineering also, he replied that he knew he was not sufficiently capable in mathematics so he avoided that curriculum, but since the first two years of architecture and engineering were similar he entered the former (the math requirement being less severe) so that he could continue to be in the same classes with his pal The counselor's duty here is to aid the student in seeking a more suitable vocation, but there is a further duty, namely, to aid in the development of an adequate secondary school guidance program to prevent the making of choices on such a flimsy basis

4. Immature Judgment of Students.—When students, exhibiting immature judgment, are permitted to choose an occupation, it is likely that subsequent failure in the training situation will occur Choices made without adequate knowledge of vocational assets, and on the basis of insufficient tryout experiences are not likely to be wisely made. Factors such as "social ambition," "rumors of fabulous salaries," "glamour of prominence," "white-collar complexes," coupled with "disdain for honest toil," are likely to dominate such choices. Proctor has shown that four-fifths of modern youth choose to enter the major professions and the executive levels of work which now engage only one-fifth of the working population [14] Furthermore, his figures show that the same proportion of children with I Q 's under 100 choose

[14] Proctor, W M., "The Use of Psychological Tests in Vocational Guidance," Chapter XV, pp 170–180, in F J Allen's *Practice in Vocational Guidance, a Book of Readings*, published by McGraw-Hill Book Company, Inc , New York, 1927, Proctor, W M , "Intelligence and Length of Schooling in Relation to Occupational Levels," *School and Soc* , 1935, 42 783–786.

these same levels of work Such facts bear eloquent testimony to the widespread need for adequate vocational guidance programs in the schools

5. Economic Pressure.—Financial limitations frequently prevent a student from choosing an occupational goal in harmony with proved assets The cost of a medical education, for example, or of other types of training may force a student with limited means to forego a type of training for which he is best fitted The alternative frequently turns out to be far less satisfactory In any event, society is robbed of potential service of great value when such instances occur The counselor can aid by putting the student in touch with sources of financial aid, if these seem adequate to meet the student's needs. An even greater service can be performed by the counselor, however, in aiding in the conduct of student personnel surveys designed to disclose the magnitude of this particular problem so that the resources of society as a whole may be tapped to provide training in accordance with talent, rather than in accordance with ability to pay.

6. Placement Facilities.—The problem of job placement has been sadly neglected by schools and colleges and by society as well One of the valuable by-products of the depression is the recognition of the need for better job-placement facilities It is gratifying to witness the development of a nation-wide system of employment offices under the auspices of the U S Department of Labor and the National Youth Administration Vocational counselors can aid through bringing about a close tie-up between the schools and these new governmental agencies The transfer of cumulative records from the school to the employment office will permit the latter to classify properly those who apply for work Encouraging youth to utilize these new employment centers will also help Finally, counselors can exert pressure to keep these new job-placement facilities free from the deadening influence of political patronage.

CHAPTER XI

TREATMENT OF PERSONAL PROBLEMS

A EMOTIONAL PROBLEMS

In discussing the treatment of emotional problems, it is well to recognize that, *for the most part*, students with very serious conflicts and maladjustments do not come to counselors but instead go directly to a psychiatrist For the most part, counselors are dealing with mild problems of maladjustment Occasionally, however, serious maladjustments do come to the counselor's attention. In such cases he should be able to spot them at once and refer them directly to more competent and professionally trained workers The counselor must recognize the fact that emotional problems may arise in any area of a student's life, not just in regard to schoolwork Moreover, personnel workers should assume responsibility for emotional adjustments outside, as well as within, the school Guidance is concerned with the individual as a whole, not just his learning of textbook material

In most personnel programs, little information is available to the counselor prior to the interview and, therefore, he must diagnose this type of maladjustment during the course of the interview In this connection it is well to recognize that the interview is, for the most part, an artificial situation and that the prestige of the counselor *in some cases* prevents a student from revealing worries and conflicts For this reason a student's behavior during the interview may not be at all typical or representative of his behavior in the classroom or in his associations with other students Many times the student will cover up an emotional problem which troubles him. He does not want to discuss such intimate problems with someone who, he feels, may hold it against him, may cause other teachers to give him low grades or may cause members of the administrative staff to take some disciplinary action against him. The last point refers particularly to problems involving sex adjustment

In the interview situation the counselor should be on the lookout for symptoms or indicators of emotional conflict Fre-

quently, students evade questions asked by the counselor Occasionally, students reveal this tendency to evade by begging the counselor to tell them point blank what vocation to choose This overdependence upon the counselor may be, *but is not always,* an indication of lack of self-confidence Sometimes students exhibit a flippant type of behavior during the interview or make defensive replies, indicating that they are on guard and wary of giving themselves away to the counselor Occasionally, they show signs of being timid: they keep their eyes directed elswehere than toward the face of the counselor, they speak in a low voice and sometimes they blush easily when certain topics are mentioned, such as sex conflicts, social adjustment, lack of popularity and the like Sometimes, students refuse to talk or they give an appearance of defiance, as though they were saying, "I dare you to get me to reveal what I am thinking" Occasionally, a student appears in a bizarre dress, being totally unaware that this is a marked deviation from the usual dress and that he stands out in an undesirable manner Occasionally, the counselor will notice untidy hands or dress, probably resulting from habitual low social standards in the family. Occasionally, speech habits, faulty grammar, use of slang and even swearing may indicate an actual or a potential social conflict and a failure to be accepted by other students All these symptoms serve as indicators of actual or potential conflicts with a student's social environment and his relationships to other students

Many times students do not see themselves as others see them and, therefore, they are not aware that these peculiarities of behavior actually cause others to avoid them In such cases the first step in treatment is for the counselor to describe such things to the student in a tactful way, to hold up a mirror for the student to see himself Such a frank statement of the counselor's impressions, given in a courteous and friendly manner after rapport has been established, will aid the student in developing adequate sensitivity to social situations Students appear to be grateful for such help

Quite frequently, students with a worry or conflict come to the counselor ostensibly to discuss the problem of a vocational choice, but actually hoping that the emotional problem will clear up secretly if the vocational problem is cleared up, or that the counselor will discover the emotional problem indirectly and

unaided That is, they want the counselor to see what is wrong without waiting to be told what is wrong A counselor who is not aware of this possible mechanism will turn the student away, thinking that solving the vocational problem is sufficient, when actually the serious emotional problem will remain untouched and the student will be dissatisfied with the counseling treatment

In identifying these mechanisms and maladjustments it is well for the counselor to understand that he is simply collecting impressions and observations, and that he has, at best, only crude indications of the *extent* of a student's deviation from the average student For this reason, it is a more adequate counseling practice to use tests of emotional maladjustment *prior* to the interview For this purpose some of the adjustment inventories described in Chapter VI will provide a preliminary diagnosis of such problems Such tests may be given to all students in the school as a group or may be given to students as part of their individual testing prior to counseling Under such testing conditions there is much less undesirable emphasis on the content and purpose of tests, causing the student to be wary of answering truthfully. If a student takes the test *after* he has discussed his problem with a counselor, he may attempt to disguise his problem or he may overemphasize it in answering the questions

It is necessary for the counselor to check his impressions made during the interview For example, suppose a counselor asks a student during the interview whether he likes to be with other students If the student replies affirmatively, the counselor still does not know the extent of his preferences for social contact or how his preferences compare with those of other students If the student had taken the social preference test, we could compare him with other students in his class and thus determine the extent of his deviation, either above or below the average for other students. This would give us a more refined diagnosis of the student's social-mindedness

It is well to emphasize again that asking personal questions during the interview may yield faulty answers because of the personality of the counselor; the student may conceal the true state of his feelings or may present them in too extreme a form Moreover, the counselor has time to ask too few questions to get an adequate sampling of a student's actual attitudes and emotional habits and to get a measure of the extent of a student's

differences from others As has been shown by many surveys, nearly all students have some worries and some emotional problems The problem facing the counselor is to determine to what degree a student's tendency to worry is being carried

Thus, we see that tests of personality traits provide a satisfactory and effective lead to the counselor; he follows these leads to get the student to open up and to get at the details of the maladjustment and the causes. In this sense, personality tests need not be assumed perfectly valid as techniques for diagnosis of the maladjustment Such tests are best used as indicators which the counselor follows up more intensively by questioning He does not need to bore or frighten the student by catechizing him, when a simple test will provide more adequate preliminary diagnoses

Now let us turn to what the counselor does after he has identified or diagnosed a personal problem, and after he understands fairly adequately the origin and ramifications of the problem We shall divide our techniques of treatment into two general categories first, those which help the student, psychologically, to master his own problems and to clear them up, and second, techniques for changing the external factors producing the irritation and thereby causing the maladjustment

The technique of discussing and talking over the problems with the student and getting him to talk about them provides an emotional release or reduction of tension which is in itself beneficial It is well for the counselor to remember that some students cannot completely solve their problems, but they can "get over" them emotionally so that they are no longer disturbed by the condition causing the problem For example, a student may have a serious conflict with his father which causes the student to be so emotionally upset that he cannot study effectively Now, it is possible that the conflict cannot be resolved, that is, that the father will continue to be irritable when he is with the son, but the counselor, by talking with the student, may desensitize the student to this irritable situation In such a case the counselor has not changed the conditions causing the problem, but rather has changed the student's sensitivity to that condition In addition to this type of treatment, the counselor should, after getting the student's consent, discuss the problem with the parent involved A competent "outsider" is

often needed to interpret to parents the psychology of their children.

Another effective technique is for the counselor, after understanding the cause of the problem, to explain to the student how his problem developed and how it reveals itself in his behavior. This explanation clarifies the student's understanding of his problem and, in most cases, gives him better control over his reactions to his problem and to its causes. In part, this reduces a student's fear and terror of his peculiar behavior, amounting in some cases to an incipient fear of insanity. Many students do not understand the psychology of insanity, and fear that any worry will inevitably lead to insanity. A counselor, if he is well informed, can reassure the student on this point. Many times this fear of insanity is associated with the presence in the family of some person who has been committed to a state institution. The student is afraid that he has inherited this tendency to insanity. An explanation of the psychology involved sometimes will relieve the student of this fear, but frequently such a student needs to be referred to a psychiatrist for more technical therapy.

Another technique is that of giving sympathetic encouragement to a lonely student who fears to reveal his problems to others for fear of censure or of being considered queer. An explanation of the psychology of abnormality will clarify this point for the student, particularly if he is told that, from the psychologist's point of view, most persons have some type of abnormality: that is, personality difficulties are a matter of amount or degree and not a matter of being normal or abnormal, there are deviations in normality; and very few people, if any, are perfectly normal. Sometimes, it is effective to remark facetiously to the student that there are only two types of perfectly adjusted individuals—those who are deceased and those who think they are Napoleon. This sometimes brings forth a laughter response and the student sees that he is not so badly maladjusted as he thought he was and that mild and temporary maladjustments may be characteristic of so-called normal persons. Of course, this technique will not work in the cases of those erratic individuals who get a tremendous kick out of discussing all their abnormalities with anyone and everyone. Such individuals are using their abnormalities as a device to get attention. The therapy for such individuals is more complicated

and requires the services of a qualified psychologist or psychiatrist. It should be emphasized again that counselors should not attempt to treat serious emotional conflicts, that is the task of qualified psychiatrists

In some cases, the counselor will have to take a hand in removing the external factors causing the irritation, for example, by removing financial factors which produce worry about getting through college or even a serious conflict at home This may lead to an interview with the parents, to interpret to the parents their own son or daughter, and to explain the student's attitude to the parents from the standpoint of an impartial and disinterested outsider with the added prestige of being a teacher in high school or college This prestige factor is very important in getting the parents to be receptive to any suggestions the counselor might make If he can reassure the parents that further financial sacrifices on their part to educate their son are well worth the investment, then they may be willing to give more money and thereby relieve the student of part of his fears If they understand from the counselor that they have been too severe or too lax with the student, then they may change the situation at home with regard to discipline

The counselor may suggest how to make more effective social contacts to those students who have had insufficient training in home and high school These undersocialized students will not respond to mass appeals to attend parties. They must be trained and encouraged to prepare for such participation in group activities He may discuss such details as how to greet people, how to introduce people, how to shake hands, how to start a conversation, how to dress attractively, how to be well groomed and other details of this type. The effective counselor may need to stimulate the setting up of needed group activities for this type of student

In treating problems of social maladjustment, the counselor may introduce the counselee to other students, or to the heads of student activities, or to faculty members He may see that the student is given an invitation to a party He may step in and actually make opportunity for the student's social adjustment He may go to the head of the boarding house or dormitory or fraternity and talk to the supervisor or to other students asking

for assistance in making the student feel at ease in social situations, thereby relieving his emotional tension

But it is well for the counselor to remember that if such techniques of treatment do not work, or if the case exhibits very serious emotional problems, he should immediately refer the case to a psychiatrist or a qualified psychologist There is nothing more dangerous than for an untrained counselor to attempt to handle a serious emotional problem with the naive expectation that just talking to the student will cause the problem to disappear Many, many counselors use but one technique, to tell the student, "Now, just quit worrying and everything will be all right" That is very much like telling a drowning man that if he will but swim to shore, he will be saved Of course if the student quits worrying, everything will be all right, but the point is that he has a habit of worrying and he cannot break the habit without expert assistance. Thus, telling him to quit worrying will not help him, he needs assistance in regard to "how to quit worrying" Most counselors err in not recognizing serious maladjustments It is safe to say that if a student's emotional tension is not reduced by the techniques referred to above, then he should be referred immediately Indeed, if the student exhibits very serious symptoms or bizarre behavior in the first interview, he should be referred immediately and the counselor should not attempt to treat him at all

It is well to remind the counselor once more that emotional problems may arise in any area of the student's life and that the counselor should keep in mind the various possible sources of such maladjustments No student case has been adequately handled until the counselor has reviewed all areas of the student's adjustment A short and incomplete list of these areas of possible maladjustment may serve as a suggestion of the types of data the counselor should collect and review before and during the case interviews:

1 Continued unfavorable comparison in the home with siblings who appear to be brighter and to be making better scholastic and social adjustment In such cases the counselor must interpret the situation to the parents and help build up the student's morale by emphasizing outstanding characteristics of the student

2 Peculiarities of personality, such as shyness, bizarre dress, obesity, etc which may lead to the student's rejection by associates and classmates A straightforward but kindly description of the student given by the counselor will often give him insight which will lead to effort and desire to avoid unfavorable social comparisons Obviously, the counselor should not seek to achieve conformity at the expense of desirable initiative and individuality

3 Worries ostensibly about ability or grades but in reality induced by conflicts in other areas of life. In such cases the causes of the problems may be so deep-seated and complex that only a competent psychiatrist can diagnose and treat the case

4 Conflicts arising in the home between student and parents over finances, social habits, vocational choice, etc, etc As a rule, parents will be very cooperative when they are convinced that the counselor has made a thorough diagnosis and has acquired an understanding of all factors entering into the problem The counselor must interview the parents and discuss the situation frankly But care must be taken to avoid disclosing confidential information revealed by either the parents or the student to the counselor

5 Worries resulting from failure to achieve success in social and activity life in college commensurate with that achieved in high school This painful deflation is usually concealed by students, with the resultant withdrawal from social contacts, or it may lead to an undesirable overcompensation in the form of political maneuvering, boisterous and adolescent "wisecracking" or other attempts to "save face" A kindly but realistic revelation of the facts to the student, together with suggestions for attempts to achieve social status, will usually yield results In many cases the counselor should personally introduce the student into group activities

6 Worries about health These should be handled in cooperation with doctors and sometimes with psychiatrists

7 Worries about speech disabilities These need to be treated with the assistance of speech pathologists

B. FINANCIAL PROBLEMS

The techniques of treatment of financial problems are relatively simple and pretty widely understood and used. These

techniques consist of referring students to specialized agencies for loans, scholarship, employment and N Y A. aid. The student should not be told merely to go to an office, but the counselor should write a personal letter or telephone to the agency, explaining the student's need and his potentialities. The counselor should explain that here is a student whose academic and vocational possibilities are such as to make him a worth-while investment for a loan, a scholarship or employment. Occasionally, the counselor may act as an employment officer himself and actually seek a job for the student, or a personal loan from among the counselor's acquaintances. The counselor may also write to other colleges and schools, recommending the student for financial assistance But it is well to remember that agencies distributing financial assistance give most attention, not to the counselor's recommendation or to the counselor's general statement that this is a good student, but to the factual material on which the counselor bases his judgment That is, an agency distributing employment or financial assistance would like to know the student's scholastic record, his test scores, what he does in the way of social activities and things like that The facts are more important than the vague statement that this is a good student

Of course, if financial and employment resources are not available, the counselor should stimulate an understanding of such needs and assist in organizing the proper resources For example, women's clubs, service clubs and alumni clubs may be called upon to organize scholarship and loan funds

C. HEALTH PROBLEMS

With regard to the health problem, here again the counselor is an amateur and should recognize his amateur's standing and not attempt to give advice on serious problems of health Insofar as possible, the counselor should have before him a report from the health officer which gives the current physical status of the student This report should be available before the first interview During the interview, the counselor may ask questions with regard to eating habits, sleeping habits and tendencies to fatigue Sometimes, just insisting that the student eat regularly or that he have fairly regular hours of sleep will clear up what otherwise is a situation leading to scholastic failure But, for

the most part, health problems should be referred directly to a health officer, with a note or a telephone call stating why the student is being referred, that is, what particular health problem the counselor had in mind

D. SPEECH PROBLEMS

A student's speech may be an asset or a liability in social adjustment in college and in getting a job after college After all, other people, including employers, want students to be able to speak fairly concisely, with grammatical correctness and a pleasing tone Other students and even employers avoid students who stutter, stammer or exhibit other serious difficulties Sometimes, these speech difficulties may disqualify a student who has high aptitude. For example, a student nurse was referred to a personnel officer because the patients complained that they did not like her and did not want her to be around them This student had satisfactory grades and high, tested aptitude, and appeared to be very well qualified for nursing training The head nurse who referred the student did not understand what the difficulty was The counselor, in the first few minutes of the interview, noticed that the student had a very harsh, unpleasant voice, which became increasingly irritating as the student continued to talk. The counselor suggested to the student that perhaps this was what irritated the patients and that she should go to the speech clinic to have her voice examined and to be advised what speech exercises she might practice in order to cultivate a more pleasing voice Her physical appearance and her dress were very satisfactory, it was just her voice that was a possible cause for the patients' reaction The student did go to the speech clinic, the diagnosis revealed that her vocal chords were unusually thick and inflexible The speech clinic gave her a number of speech exercises to practice Three weeks later, she came back to the counselor saying that the patients no longer complained about her and that she was making a satisfactory record.

It is well for counselors to recognize that serious speech difficulties, noticeable to other people, call for the assistance of technically trained workers Minor difficulties may be treated by the counselor, but, in view of the importance of speech in social and vocational adjustment, it is advisable for the counselor

to refer students to a speech clinic or to a teacher of speech for specialized treatment Those having minor speech difficulties, however, may be advised to enter public speaking classes

E PREVENTION

Every guidance worker must recognize and carry out his responsibility for doing more than to diagnose and advise the individual student A very large number of student problems arise from certain sociological and educational conditions in the school itself or in the adjacent community If guidance is ever to become more than remedial, workers must assume responsibility for clearing up the conditions which give rise to problems This is the strategy of preventive work, so to organize and permeate the school and community with the personnel point of view, that many student maladjustments will be prevented from arising The cooperation of community officials and of parents is just as necessary as is that of school teachers and administrators, and perhaps easier to secure It is a basic principle in guidance, that such personnel work, the preventive phase, will result in a more effective educational system.

CHAPTER XII

GUIDANCE—A PROFESSIONAL SERVICE

As was stated in Chapter I, one of the outstanding characteristics of student guidance problems is the fact of complexity. Most students in need of guidance service exhibit, not one problem in a restricted adjustment area, but two or more problems in two or more areas of adjustment. For this reason, no single, specialized type of guidance service will be adequate to meet the needs of students.

The fact of complexity of problems requiring solution forces us to recognize the artificiality of attempts to distinguish between vocational guidance and other types of guidance. In fact, one of the weaknesses of the vocational guidance movement itself has been the attempt to develop a vocational guidance service as an independent agency in the educational system. No wonder that such guidance efforts have been looked upon as a fifth wheel in the educational vehicle! No wonder, too, that such guidance efforts have been as ineffective as a fifth wheel!

A view of guidance that recognizes its complexity and its intimate concern with every variety of student adjustment problems is rapidly coming to the fore. And with this change in point of view we are witnessing an increased acceptance of guidance as a central feature of an effective educational program. Increasingly, the educational administrator, the classroom teacher and the guidance specialist are beginning to speak the same language, because each is accepting a philosophy of education in which individualization is the cardinal principle. This is evident in the rapid spread of the personnel point of view in modern education.

But individualization cannot be accomplished without adequate means for diagnosing the assets and liabilities of each student. Since diagnosis is an essential first step in all effective teaching and training, it becomes self-evident that the primary aim of the school can no longer be confined to a "filling-station"

function in serving the students Instead, the school must "learn them" in order to teach them

It is easy to accept the doctrine of individualization with diagnosis as its corollary. But the complexity of the guidance problems to be diagnosed makes it difficult to put the doctrine into everyday practice This is so because the complexity of problems necessitates a parallel complexity in diagnostic techniques and methods of treatment. A superficial reading of the chapters in this handbook will reveal that fact

It is too much to expect that each school administrator and each school teacher will become an expert diagnostician For this reason, each unit in the educational system will require the services of a counselor who is primarily a trained diagnostician And the counselor's effectiveness will depend upon the extent to which administrators and teachers will adjust their services to the needs of the individual student as disclosed by diagnosis The counselor's effectiveness will also depend upon the extent to which the school can provide specialized professional services for the solution of certain types of problems It is obvious that problems in the area of health must be diagnosed and treated by physicians and dentists, reinforced by nurses, medical technicians and dental hygiene workers Experts in speech-correction work must also be available. Psychologists and psychiatrists must likewise be on call to handle emotional difficulties ranging in severity from mild disorders to the outright psychoses In addition, the trained social worker is necessary for contact and investigatory work in the homes and existing social agencies

But what about the qualifications of the counselor? Are his services so general in character that almost any well-educated and well-intentioned person can fulfill the requirements? The way the school answers these two questions will determine the quality of the program for individualization

It is only recently that leaders in the guidance movement are concerning themselves with this problem At the 1937 meeting of the National Vocational Guidance Association, a Committee on Qualifications of Guidance Workers submitted a progress report.[1] The report is noteworthy, because it proposes to

[1] SMITH, F C., "National Vocational Guidance Association," *Occupations, The Vocational Guidance Magazine*, 1937, 15 771 The Keller report itself will probably be printed in this same magazine in the near future.

establish minimum *measured* qualifications, rather than merely to specify the number and variety of professional courses to which a guidance worker should have been exposed. To carry out the recommendations of the committee will require extensive experimentation and a subvention is now being sought from one of the large foundations.

In the meantime, it is possible to outline briefly a job-specification picture of the qualifications required of a professionally trained general counselor [2] The following description assumes that the general counselor must be qualified to develop and administer an adequate diagnostic service and, hence, must first qualify in the field of educational and vocational psychology

MINIMUM QUALIFICATIONS FOR A COUNSELOR

Education.—Graduation from an accredited university graduate school with a Master's degree in psychometrics or its equivalent Graduate training in as many as possible of the following specific fields: Tests and measurements—group and individual, educational and vocational; advanced statistical methods, industrial and personnel psychology, vocational psychology; abnormal psychology, social psychology, social pathology; social case work; personnel administration and management; occupational studies and job analysis, labor problems. The training in these specific fields will include classroom work, field work, and research.

Experience.—Two years' paid, full-time, recent employment in individual diagnosis work, carried on in connection with vocational rehabilitation, vocational and educational guidance, employment or personnel work and related types of service. Graduate training, in addition to the M.S in psychometrics, in the same specified fields of study may be substituted for experience, year for year

Intellect.—Scholastic competence (measured by grades and achievement tests) and intellect (measured by intelligence tests especially prepared for use at the college level) above the median of college seniors in first-class universities and colleges.

[2] Adapted from specifications prepared by members of the Occupational Research Program, U.S Employment Service, and by the Division of Rehabilitation, Minnesota State Department of Education See F H Finch, "Qualifications for Rehabilitation Counselors," *Occupations, The Vocational Guidance Magazine*, 1937, 15 628–630

Interests.—The counselor should possess vocational interests (measured by Strong's Vocational Interest Blank) characteristic of adult professional workers in the various personnel occupations.

Personality.—The counselor must be free from personality defects and personality-adjustment difficulties and in addition must be able to deal effectively with, and inspire confidence of, other individuals and groups

Sex.—Male or female

ADDITIONAL DESIRABLE QUALIFICATIONS

Education.—Graduation from an accredited university graduate school with the Ph D degree in technological psychology or its equivalent

Experience.—Two or more years of recent employment in as many as possible of the following fields· vocational and educational guidance, vocational education, personnel work in government, business, or industry, psychometrics, clinical psychology

Special Knowledge.—Knowledge of various types of jobs, job specifications and occupational information, derived from job studies and studies of occupational trends, knowledge of academic and vocational training agencies; knowledge of public and community agencies, such as employment services, rehabilitation agencies, health agencies, social agencies, psychiatric clinics

The requirements outlined above are admittedly much higher than those that have prevailed hitherto But this is necessary, in view of the progress that has now been made in the development of technical methods of diagnosing capacities, abilities, interests and other personality characteristics Persons possessing these qualifications will be difficult to locate, however, because of the failure of graduate schools to modify degree requirements in accordance with present-day needs for professional practitioners. Intensive specialization in orthodox academic psychology, which is admirably designed to prepare Ph D 's to train other Ph D 's will not do The inadequacy of such orthodox training is not only due to the depth and narrowness of training in research, but it is also due to the fact that such training itself seems to select a type of graduate student who is primarily interested in science and types of activity that will promote scientific progress No one can have any quarrel with this type of training and the type of students selected for such

training The difficulty arises when the supply of such persons exceeds present-day research and academic teaching needs and the excess supply is diverted willy-nilly into the technological field, where different preparation and different personality characteristics are required A more satisfying solution will come when departments of psychology, education, sociology and economics can be persuaded to work out a coordinated program of graduate studies designed to prepare persons for effective service in the broad area of human engineering The professional training of the guidance counselor will have a definite place in such an educational program

Discussion of the qualifications of guidance counselors naturally leads to a consideration of duties and responsibilities These may be listed as follows:

1. **Diagnostic Service.**—(*a*) Cooperating with the teaching staff in giving a minimal battery of group tests to locate students in need of specialized guidance service in the major adjustment areas (*b*) Providing teaching staff with diagnostic data to permit individualization in program making, classroom teaching, etc (*c*) Providing means for further testing and diagnosis of individual students referred by teachers or coming voluntarily

2. **Treatment.**—(*a*) Aiding students to formulate a suitable program for the solution of educational, vocational and social difficulties (*b*) Securing the cooperation of teachers, parents, classmates, specialized guidance experts, community agencies, etc , as may be necessary to enable the student to carry out his formulated plans (*c*) Follow-up service to provide the student with such additional diagnostic service as may be found necessary and to reformulate plans to overcome obstacles to satisfactory adjustment

3. **Analysis of Student Needs.**—(*a*) Surveying student needs in the major adjustment areas, in order to locate problems requiring administrative action for solution, such as· Curricular changes, establishment of loan funds, scholarships and work opportunities, improvements in conduct of extra-curricular activities, more adequate provision for socialization activities, etc (*b*) Surveying occupational trends and local employment opportunities and placing the findings at the disposal of teachers, students, parents, employers and community leaders

4. Coordination of Personnel Services in the Interest of the Student.—(*a*) Developing a system of cumulative records and aiding administrators and teachers to use these data in making administrative decisions and in planning educational activities for the student (*b*) Developing methods of securing the aid of the teaching staff in contributing valid data to the cumulative records (*c*) Holding staff conferences to discuss the needs of particular students as a means of "educating" administrators, department heads, teachers and guidance specialists in regard to the meaning of "diagnosis" and "treatment"

The above suggested outline of duties recognizes the necessity for developing a student-personnel program as an intimate concern of all members of the administrative and teaching staff It recognizes the futility of giving "guidance" in an office which is insulated from the operating staff of the school It assumes that a properly qualified counselor will be the one officer in the school whose duty it is to enable the school to put into operation a thoroughgoing program of individualization When such a program is functioning effectively, the guidance counselor can turn his attention to the development of improved diagnostic services and the conduct of personnel research studies to keep the school abreast of changes demanding readjustments in the school program

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